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THE MATHEMATICAL ASPECT OF THE UNIVERSE[1]

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In Plutarch's *Quæstiones Conviviales* there is a discussion on the topic—πῶς Πλάτων ἔλεγε τὸν θεὸν ἀεὶ γεωμετρεῖν ("What did Plato mean when he used to say that God always geometrizes?").

I shall not attempt to answer this question, but rather shall suggest a different one: If Plato had been conversant with all the scientific knowledge and ideas of to-day, in what sense might he have said that God for ever geometrizes, or, in more modern phraseology, that the universe is constructed on geometrical lines?

To the Greeks, space was merely a framework for an arrangement of material objects. A was behind B when you could not see A because of B. In this case A, B and yourself lay on a straight line. As an effort of pure imagination objects can be arranged in all sorts of ways—in a line, or a plane, in a three-dimensional space, in a four-dimensional space, and so on. Actually, experience shows that an arrangement in what the mathematicians call a three-dimensional array is in some way true to Nature; when our minds create a three-dimensional space, the arrangement of all the objects we can see can be made to fall objectively into law and order.

Actually, everyday experience takes us a bit farther than this; it suggests that the three-dimensional space in which we live is of the kind we usually describe as Euclidean—parallel lines never meet, and so on. All that we are entitled to deduce from such experience is that the mental creation of a space of this kind brings law and order into the arrangement of objects near home; it provides no justification for extending these properties to the whole universe.

[1] An address delivered to the British Institute of Philosophy at University College, London, on October 13, 1931.

There is a peculiar religious sect whose members describe themselves as Zetetists. One of their tenets is that the earth's surface is flat, or, if we like, Euclidean—so that parallel lines on the earth's surface never meet. No amount of abstract argument will persuade the Zetetist that he is wrong. The little bit of the earth in which his daily walk or daily labour lies is flat, and this flatness so pervades his mental make-up that he cannot conceive any possibility except flatness, which he then wrongly extends to the whole earth. In the same way, the special Euclidean quality of space in our neighbourhood is an empirical fact, but we know now that we shall be in error if we extend it to cover the whole universe. I shall try to explain why.

Three hundred years before Christ, Euclid had defined a straight line as the shortest distance between two points, and asserted that light travelled in straight lines. Thus he knew that light took the shortest path from point to point. He also knew that light could be deflected from its path by a mirror, and discovered the laws of reflection, finding that light which was reflected by a mirror followed the same path as a perfectly hard particle bouncing off the mirror.

To Euclid these were two totally disconnected facts. About a century later, Hero of Alexandria combined them in a very significant synthesis; he showed that even when light was reflected at a mirror its path was still the shortest possible, subject to the condition that it must go to the mirror and back in its course—mirror or no mirror, light followed the shortest path.

Light can experience other accidents besides reflection. For instance, we can see the setting sun even after, geometrically, it has passed below the horizon. The rays by which we see it are said to be "refracted," or bent, by the earth's atmosphere. Obviously these rays cannot be following the shortest path, since a bent path can never be as short as a straight one.

Actually, they are following the quickest path. When light passes through a material substance, such as glass or air, the particles of matter impede its motion. The denser the substance, the slower the speed of travel of the light. The quickest path for a sunbeam is not the shortest, but is one which avoids travelling overmuch through the dense air near the earth's surface, the rays bending round this rather than travelling directly through it.

Hero had stated his synthesis in the form that light, whether reflected or not, takes the shortest course from point to point. He might with equal truth have said that it takes the quickest. Had he done so, his synthesis would have covered the case of refracted light without any modification whatever, and indeed of light moving in all the ways known to science. All known light takes the quickest path from point to point.

The undulatory theory of light provided a simple explanation of this, on the assumption that light was the motion of waves travelling through a material substance—the ether—which was supposed to fill all space.

The universe contains matter as well as radiation—what of this? It seems almost incredible that particles of matter can be brought under the same synthesis as rays of light, yet such is the fact. Aristotelian doctrine had asserted that substances tended to rise or sink, according as they were light or heavy. Galileo and Newton made it clear that this was not a universal law of nature, but a mere local effect due to the gravitational pull of the earth; in the absence of such forces all objects moved in straight lines with uniform speed. Like light, they took the shortest path from point to point; or, if their speed of motion was assigned, they took the quickest path from point to point—again like light.

When forces were acting, bodies obviously did not take either the shortest or the quickest paths—for instance, a cricket-ball in the air. But Maupertuis discovered that there was a quantity known as the "action" associated with the motion either of a single object or of a group of objects; each bit of motion involved a certain calculable rate of expenditure of "action," and, no matter what forces were in operation, objects moved in such a way as to make the total expenditure of action a minimum. There was no obvious physical reason why this should be, although Maupertuis advanced one of a metaphysical nature, arguing that the perfection of nature required the greatest possible economy in the expenditure of action.

The older principles of least distance and of least time now became absorbed in the new principle of "least action," which provided a synthesis to cover the motion both of objects and of light—of matter and radiation, the two constituents of the physical universe. The synthesis was not quite perfect, as we shall shortly see, but even so it has been of tremendous value. We saw how the special principle of "least time" for rays of light was explained by supposing light to consist of waves. This explanation proved inadequate when it was discovered, only a few years ago, that in many respects waves of light behaved rather more like particles of matter than like our earlier conceptions of waves. This was followed by the discovery that the ultimate particles of matter—electrons and protons—behave very much like waves. We now know that it is quite impossible to divide nature up into particles and waves; we can no longer find any sharp-cut distinction between them. The synthesis of "least action" shows how this can be, and is found to give a satisfactory explanation of the behaviour of both particles and waves. This explanation is of course purely mathematical: it tells us nothing as to the nature of objects it deals with. And, indeed, we still know

very little about what we used to call particles of matter except that they are not mere particles, and very little as to the nature of light except that it is not mere waves. The physicist who wishes to work at the properties of either matter or light must do so in purely mathematical terms; science has reached a stage in which the old physical concepts of particles and waves will only lead him astray.

Nevertheless, the simple synthesis of "least action" has not proved capable of explaining everything in nature. At first it could be altered and extended so as to bring new phenomena under its scope, but—ominous sign!—with each extension it became more intricate and, to all appearances, more artificial, until finally it broke loose from the facts altogether; nothing could make it fit. Even in its most intricate form, it still predicts that gravitating bodies should bend starlight only half as much as they are observed to do; it still predicts that the perihelion of Mercury should stand still, instead of advancing round the sun at about eighty miles a year. The principle suffers from the fundamental defect that it supposes bodies to be moved by mechanical force, whereas the theory of relativity has banished force, and, indeed, mechanism in general, from nature.

Actually the principle, and the mechanical concepts on which it was based, received their death-blow in some experiments which Michelson and Morley performed with simple mirrors and lenses in 1887, although it was not until many years later that the scientific world became convinced of this. A mechanical conception of nature fits the events of everyday life in which we do not go far from home exceedingly well—as also does a conception of a flat earth. But as science has extended the scope of its operations, viewing the farthest depth of space and even the cosmos as a whole, and penetrating into the hidden recesses of the atom, this mechanical concept has failed: it left off bringing law and order into the phenomena of nature, and brought contradictions and nonsense instead—much as the concept of a flat earth would bring contradictions and nonsense into the efforts of a Zetetist to describe his travels to distant lands.

We have already seen how the average man thinks of the objects of the world as arranged in a three-dimensional space, while its occurrences take place in a one-dimensional time, a sort of ever-flowing stream, so that we can say: this event happened at such an instant in the course of time, this other event at another instant lower down the stream, and so on. Like the flat earth, this scheme fits the facts well enough so long as we stay near home; it is perfectly sensible and logical to say that the Battle of Hastings took place at a certain region of the earth's surface, at a certain point of time which we designate as A.D. 1066. Yet we now know, thanks mainly to Einstein and Minkowski, that such a procedure is only sensible

and logical so long as we, and all the objects with which we are concerned, move much more slowly than light. We have no direct knowledge of the objective existence of either space or time; we simply infer them both from everyday experiences in which space and time are both involved. And the theory of relativity has shown us that for the general phenomena of nature the concepts of space and time are equally meaningless; the only proper framework for the representation of these phenomena is one in which space and time are inextricably welded together, three dimensions of space being combined with one of time, so as to make something which is neither space nor time—the four-dimensional "space-time" continuum of modern physics.

Each of us individually divides this into three dimensions of space and one of time, but our division is as subjective and as local as the Aristotelian division of the three dimensions of space into one vertical and two horizontal. This latter division was "local" to people residing on the same small bit of the earth's surface. Our special division of the space-time continuum into space and time is "local" to people who are moving through space with the same speed as ourselves.

When we arrange the general phenomena of nature in the new four-dimensional space-time framework provided by the theory of relativity—when we project them on to such a background—they become consistent and make sense; if we refuse to do this, they become mere nonsense and compel us to abandon our belief in the uniformity of nature. Thus we must give up our old belief in space and time as objective realities, and replace them by a new framework, in which it is meaningless to speak of a point of space or an instant of time. Points in the framework represent events; the distance from one event to another is called the "interval," and involves a blend of space with time. Our old principles of "shortest length" and "least time" cannot even be expressed in this new framework; the only principle which can possibly have any consistent or logical meaning is one of "least interval."

And in actual fact this principle is found to govern and to predict the whole motion of the universe, except possibly for the internal motions of the atom. It equally governs the motion of a ray of light and of a moving body, and it remains valid—or so we suspect, although this is not fully confirmed yet—whatever physical agencies are in action, whether gravitation, electricity, or what not. The presence of a gravitating mass such as our earth does not "draw a body off from its rectilinear path," as Newton thought, by exerting forces; it twists up the framework so that the path of "least interval" itself becomes curved.

The flat-earth heretic who took to travel might begin by drawing

a flat map of the earth on which to record his journeys—it would be the ordinary Mercator projection. On such a map he would find that all steamship courses looked very curved; in the northern hemisphere the shortest course from point to point always bends towards the north pole, so as to "take advantage of the shorter degrees of longitude up north." The traveller might at first think the ships were pulled out of their courses by some attractive force towards the north pole—this would correspond to Newton's concept of a "force of gravitation." Then one day all his theories might be upset by the discovery that these tracks actually were the shortest possible, in spite of their apparent curvature. After this he might set his thinking faculties to work, discover that his two-dimensional map did not truly represent the facts, and devise a map drawn on the surface of a sphere—this would correspond to Einstein's work of 1915. When once he had grasped the concept of a spherical map, he would see that it fitted all the facts. He would at once see that his ships had appeared to follow curved tracks, not because forces were pulling them out of their courses, but because the framework of latitude and longitude, which actually is twisted by the curvature of the earth, had been artificially untwisted in his projection. The curvature is inherent in the framework of latitude and longitude, and not in the ship's course; in unnaturally uncurving the one, an apparent curvature is introduced into the other. And it is the same with the curved paths of a cricket-ball or of a planet round the sun.

The true curvature which is inherent in the framework of latitude and longitude on the earth's surface causes this to curve back on itself and close up into a finite surface. It is the same with the curvature which Einstein's theory imposes on the space-time framework. This causes the framework to curve back on itself and so gives us a finite universe. It is in this way that we now believe that space is finite, and it is geometry that makes it so.

A framework which curves back on itself and closes up does not necessarily resemble the earth or a sphere in its geometry. At first Einstein thought that the closing up of the universe was more like what we obtain when we roll a sheet of paper into a cylinder, so that in one direction there was no closing up at all. This one direction he identified with time, so that space became finite while time remained infinite, extending from an eternity back in the past, through the present, to an eternity in the future. Recent work by Lemaître and others suggests that this cylinder must be replaced by a cone or horn-shaped surface—again with time for the open axis. Space, which is the cross-section of the horn, is still finite, but it for ever expands as we move outwards from the mouthpiece of the horn—*i.e.* as time advances. Time itself has a beginning in the past, although not very clearly defined, represented by the

mouthpiece of the horn. But there is no end in the future, time running steadily on from some instant not very long ago to eternity, with the spatial universe expanding all the time.

At first sight this may look like a mere phantasy—mathematics run amok. Yet we seem to be driven to it not only by theory, but also by what appear to be well-established facts of observation; the expansion of space obtains direct observational support in the apparent recessions of the great extra-galactic nebulæ. If the observations are taken at their face value, these nebulæ are running away from us and from one another at terrific speeds, ranging up to 12,300 miles a second, and the details of their motions are just about what we should expect if space were actually expanding.

I have tried to describe how Hero's first simple synthesis of the two laws of Euclid has been gradually extended and modified until it has finally emerged as a general principle covering all the phenomena of nature. We used to think of it as applying to particles of matter and to rays of light existing and travelling in a framework of space and time. But in the process of making a perfect fit between the principle and the observed facts of nature, we have had to discard space and time as objective realities; forces and mechanism have dropped out of the picture altogether, and we have discovered that, whatever matter and radiation may be, they are very different from anything we used to imagine. In spite of all this, the principle has retained its mathematical form practically unchanged since it was first enunciated more than twenty centuries ago. While the mathematical principle has stood fast, one physical dress after another has been tried with a view to clothing it—and none has been found to fit! For just as Hero was unable to give any physical or mechanical explanation of his simple principle, so modern science is unable to give any physical or mechanical explanation of the new and wider principle; we have an almost complete and perfect knowledge of the principle itself, but none as to the nature of the objects with which the principle deals; a particle and a ray of light can still be expressed only as mathematical symbols.

If we must try to interpret the principle, perhaps our best course will be to translate the old interpretation of Maupertuis into modern language, and attribute the principle of "least interval," as he did that of "least action," to the infinite perfection of nature. This perfection is of a purely mathematical nature, and this encourages us to say that the physical universe is constructed on mathematical lines—or, as Plato said, that God for ever geometrizes.

Other developments of modern science lead us to the same conclusion. Time after time, when physical concepts have introduced confusion and inconsistency into science, the concepts of pure

mathematics have come to the rescue, and restored law and order. Broadly speaking, it is true that treating the ultimate problems of nature on physical or mechanical lines has not been successful, while treating them on mathematical lines invariably has been successful.

To see the full significance of this, let us glance at the general history of scientific thought. Briefly, man's efforts to interpret nature fall into three epochs, which may be suggested by the words animistic, mechanical, and mathematical. The first covers the period up to Galileo and Newton; the second the period from Galileo and Newton up to the beginning of the present century; the third the period from this date to the present time.

The animistic period was characterized by the error of supposing that the course of nature was governed by the whims and passions of beings more or less like man himself, by the capricious wills of good or evil spirits or of gods and goddesses, wood-nymphs or demons.

The mechanistic period came when physical science applied itself to the study of inanimate matter. The simplest way of affecting inanimate matter was to push it or pull it by means of muscular effort. And, so long as men could only experiment with objects which were comparable in size with their own bodies, the whole of inanimate nature appeared to behave as though its constituent pieces exerted pushes and pulls on one another, exactly similar to those we exert on them by the action of our muscles—it was in this way that the science of mechanics had its origin. Each piece of matter was supposed to exert a "force" on every other piece, and these forces produced the motions of the bodies in question, or rather the changes of motion. It was found these could all be explained by postulating a quite simple scheme of forces. The force which A exerted on B was equal in amount to that which B exerted on A. When the forces were gravitational or electrical, the bodies need not be in contact; increasing the distance between A and B then decreased the amount of the force in the inverse ratio of the square of the distance A B, and so on. For a long time this scheme seemed to provide a perfect interpretation of inanimate nature—as indeed it did so long as, to return to our flat-earth comparison, we did not wander too far from home.

Thus it came about that, until near the end of last century, science proceeded on the assumption that the whole external world necessarily behaved in a mechanical way. The scientist saw himself surrounded by an ocean of machinery, and assumed that all the phenomena he observed resulted from the activity of this machinery. The deadly working hypothesis that all nature must ultimately

prove to be mechanical pervaded the whole of the physical science of the nineteenth century, and much effort was directed to inferring the nature of the machinery from the phenomena.

Then, as science began to wander farther from home, its inferences as to the nature of the assumed machinery became first confused, and then contradictory and absurd, until finally there was only one inference possible, namely, that the assumed machinery did not exist at all. Science began to see that the assumption of a mechanical universe in which objects pushed one another about, like players in a football scrimmage, was as much an anthropomorphic error as the earlier animistic universe of our primitive ancestors, in which events took place according to the caprices and whims of gods and goddesses. Man had freed himself from the error of imagining that the workings of the universe could be compared to those of his own whims and caprices, only to fall into the similar error of imagining that they could be compared to the workings of his own muscles and sinews.

So far scientists had proceeded on the same general lines as the child and the unreflective savage; out of the impressions registered through their senses, they had built an inferential world of external objects which they believed to be real. The ingredients of this inferential external universe which still survived in 1900 were space, time, material bodies, forces acting on these, and a substantial ether which filled all space and transmitted forces. Twentieth-century science, penetrating to the farthest depths of the universe, has swept these away one and all—not from choice, but from necessity. They had to be swept away, because their presence introduced confusion and inconsistency into the scientific picture of the world. Space and time, it is true, have not been swept completely out of existence, but they have lost all individual identity, and become merged together to form something different from either—the space-time "continuum."

Had science continued to pursue its old methods, it might next have tried to draw a concrete picture of this continuum. Actually it followed a very different line. For just about this time, mainly under the guidance of Poincaré, Einstein, and Heisenberg, it came to recognize that its only proper objects of study were the sensations that the objects of the external universe produced on our senses. The dictum *esse est percipi* was adopted whole-heartedly from philosophy—not because scientists had any predilections for an idealist philosophy, but because the assumption that things existed which could not be perceived had led them into a whole morass of inconsistencies and impossibilities. The new policy was not adopted of set purpose or choice, but rather by a process of exhaustion. Those who did not adopt it were simply left behind, and the torch of knowledge was carried onward by those who did.

To take an instance, nineteenth-century science, in its blind faith in a mechanical universe, had supposed that where electric effects were transmitted from one point to another, as in radio, there must be a substantial medium—the ether—to transmit them. Now that science has failed to find any direct action of this ether on our senses, it has dropped the ether out of its stock of concepts, and finds that in so doing it can reduce the phenomena in question to complete order and consistency.

Another example has already been mentioned. The old scheme by which forces produced changes in the motion of objects was based upon the assumption that objects moved in an objective space with a speed which could be measured against the flow of the river of time; in brief, it assumed the existence of objective space and objective time. As soon as Einstein discarded these assumptions, and with them the now meaningless concept of force, he was able to reduce the phenomena of the whole universe to law and order, through the principle of minimum interval, which forms the central concept of his theory of relativity.

This procedure saved science from making assumptions, anthropomorphic or otherwise, which had no counterpart in external nature, and set it free to study the observable universe, the world which is capable of affecting our senses, aided of course when necessary by intensifying instruments such as telescopes, microscopes, photographic plates, electrometers, galvanometers, and all the other paraphernalia of the physical laboratory and the observatory.

It naturally studies the behaviour of the phenomenal world in a mathematical way, partly so as to be able to describe and discuss this behaviour with complete exactness, but partly also because it is the only objective way. The poet may see poetry in the universe, the artist may see art, the moralist may see purposiveness, but these are all subjective—the art, poetry, and purposiveness are as much secondary qualities of the universe as colour and smell are of separate objects in it. Just as colour-blind men are incapable of seeing colour, so many are blind to poetry and art. But all can agree on exact measurements. Hence the objective pre-eminence of the mathematical way of regarding the outer world.

It is then inevitable that the picture which modern science draws of the external world should be mathematical in its nature; it could not be otherwise. The essential point is not that the picture is mathematical, but that a particular kind of mathematical picture is successful, and this with a kind of success such as is not shown by, let us say, the æsthetic, poetic, or moral pictures of the universe —there is nothing to correspond to the mixture of evil with good, of the unbeautiful with the beautiful. The secret of nature has yielded to the mathematical line of attack.

This picture is one from which everything has dropped out except purely mental concepts. Again, it may be said that it could not be otherwise, since science has deliberately excluded all else from its purview. But the essential point is not that science has done this. It is that science found itself forced to do this by the hard facts of nature. One physical concept after another has been abandoned, not from choice but from necessity, until nothing is left but an array of events in the four-dimensional continuum.

Science, studying the arrangement of these events, finds that this is of an exceedingly simple mathematical kind. It might reasonably have been expected that the discovery of the arrangement would disclose, or at least suggest, some reason why this special arrangement prevailed rather than another. It is as though we had set out to study the fundamental texture of a half-tone print, and had found this to consist of regularly spaced dots. Incidentally this would not of course imply that the picture might not have, say, a moral or æsthetic value—such values are not the province of science. The point of interest to science is that when we had discovered the fundamental texture of the picture, this might have been expected to tell us something as to its physical nature, something, for instance, as to the substance on which the picture was printed. But in its present-day picture of the universe, science is unable to discover anything about the dots except the exceedingly simple orderliness of their arrangement. Every attempt to assign a meaning to the dots has so far led to mere confusion and inconsistency: nothing seems to possess any reality different from that of a mere mental concept.

To take an obvious illustration of this, the finite space of modern science is most easily understood as a mental concept; we can hardly picture it as a physical reality. If we try to do so, we are at once asked what is outside the space. What can there be except more space, and so on *ad infinitum*?—which proves that space cannot be finite.

The concept of an expanding space raises similar questions. What can space expand into, except more space? And if it does so, the space which expands cannot be the whole of space, and so on, whence it follows that the whole of space cannot be expanding. Thus we cannot attribute any reality to the space of the universe, except as a mental concept. In part, of course, this merely reaffirms the necessity for abandoning the objective reality of space; we have already seen that space cannot have any objective reality except as one constituent of the continuum. But similar considerations apply to the continuum itself, the one entity in which science absorbs all others, and to which alone an objective reality seems possible. We find that we must regard this too as bounded, and

unless we treat this also as a mere mental concept, we are confronted with the question as to what lies beyond the boundaries.

Thus at present any attempt to treat either space or the continuum itself as other than a mental concept seems to lead to confusion and contradiction. Yet it may of course be that precisely through these concepts science is leading us to a new kind of reality, hitherto unimagined by us.

If this is so, I do not know whether the old conflict between realism and idealism still has any meaning in the light of the findings of modern science. If it has, which I doubt, it seems to me that the statement of the alternatives would have to be somewhat as follows. As science conducts us along the road from our perceptions, through superficial appearances and our first hasty, and possibly erroneous, inferences as to their origin, until we finally reach the law and order which we are now finding to lie behind them, does the prospect we see become more like or less like that at the start of our journey? Realism, of course, expects the answer "less like," because it maintains that the journey carries us away from thought to a reality, which it believes to be of entirely different kind from thought. Idealism expects the contrary answer, believing that the journey carries us from thought, through possible illusions, back to thought. I may as well admit I hardly expect that this will be accepted as a fair statement of the case, but if it should be, it seems to me—although many will disagree—that modern science distinctly inclines towards the answer for which idealism is waiting. But she can make no claim to be all-wise—indeed, she is only just beginning to learn—and if she is prudent she will add that she may conceivably again exercise her privilege of changing her mind. Perhaps it would be even more prudent to say she does not know—or perhaps that she finds the question unintelligible.

POETRY AND PROSE IN THE ARTS (I)

PROFESSOR S. ALEXANDER

IN LITERATURE

I SHALL begin by a distinction which will limit my subject. I propose to speak only of beautiful poetry and beautiful prose, or if the phrase be preferred, artistic poetry and prose. The distinction I wish to draw is between art and craft, between making a competent and useful thing which exactly fits its purpose and making it beautifully, between technical skill and artistry, between good workmanship and design and that touch of rareness which makes not merely good but fine and lovely. The boundaries are difficult to draw. For much craft is also beautiful, and the craftsman is always in doing his best, striving to be an artist and often succeeding. But they are not the same things. Mere technical skill will not make a work beautiful but only correct, and on the other hand art may possess beauty, even if not of the highest order; though it fails in skill, the conception in some degree makes up for the defect of skill, as for instance much primitive Italian painting or Greek sculpture, which is defective in drawing or modelling and yet beautiful. Now a large part, perhaps the greater part, of what is called art is not art at all, but craft, good correct painting or drawing or sculpture; pleasing, but not pleasing with the pleasure or even rapture which beauty gives. It is so with prose and poetry. Many poems are not poetry, though written in impeccable verse, and long poems are always apt to drop in places into what is only not called prose because it is metrical. By far the greatest part of prose is merely good workmanlike writing, and in no sense art. I am not intending to depreciate craft, and still less the value and difficulty of attaining it. To write good workmanlike English is a very difficult thing to acquire, as all of us know who have not been trained at school as the young are trained in France to express themselves well in the mother tongue. It is unjust to speak of hack-work. The Grub Street writer may be an excellent craftsman who deserves more reward than he gets. But there remains the difference between his work and that of such literary men as Southey and Goldsmith, who add the touch of delight: the first in a recognizable degree, the second in the remarkable degree which makes him a model of prose of the unadorned kind, but still leaves him a less great artist in prose than Swift. I shall not try to say what the difference is, for that is not my subject. I am only concerned to exclude from consideration a mass of good stuff in all sorts of art as well as in

literature which is not really art, and to ask what is the difference of beautiful prose and poetry.

The most natural answer is that there is no difference except in the form; poetry is metrical as well as rhythmical, prose has its rhythm, which has lately been studied with peculiar success, but is not metrical, that is, does not repeat its rhythms with regularity as poetry does. Perhaps in the end there may be no more to say than what the Maître de Philosophie in Molière said to M. Jourdain, "What is prose is not verse, and what is verse is not prose." A friend of mine defined poetry to me once as whatever can best be expressed in verse. That is not saying quite the same thing as Molière's teacher, for my friend said what can "best" be expressed, and when you ask why best, you raise the question whether there may not be something in the subject or the way it is conceived which compels the choice of verse or prose as the case may be. On the other hand, there is the view of Mr. Herbert Read,[1] "that the difference between poetry and prose is a qualitative difference." According to him the distinction is "a material distinction . . . poetry is the expression of one form of mental activity, prose the expression of another form." I think him right, though I am not so sure that he has stated the difference correctly or finally when he says that poetry is "creative expression," prose is "constructive expression." Granting that that beauty lies always in the form of a work of art, we must admit that there is room for variety to arise in virtue of the substance of what is embodied in the work. Such a difference in beautiful words or beautiful language—a difference which some, like Mr. Read, describe as a difference in the mental activity involved, which I prefer to describe as a difference in the subject or the treatment of it which makes the subject itself different, a difference which is of course reflected or expressed, or even may be said to have its only real existence in the choice of the words—is the difference between beautiful poetry and beautiful prose.

The strict antithesis indeed to prose is verse. But this is clearly not the same thing as the antithesis of poetry and prose. For it is at least arguable that some prose is really poetry; and there is no doubt that some verse is not poetry at all, but is prose with the mere external form which poetry generally assumes. Yet when this is put aside, there is still much to be said for the formal view. There is no hard-and-fast line between poetry and prose. There is the whole scale of gradation from manifest prose like Swift, through imaginative prose such as you may get in Newman, whose work is undoubted prose, and between poems near to prose like much didactic or satiric poetry (Pope or Juvenal) to undoubted poetry. Or again, there is the fact that an artist like Molière used to write his comedies first

[1] *English Prose Styles*, p. xii.

in prose and then versify them, except when he was pressed for time, as in the latter part of the *Bourgeois Gentilhomme* and in the whole of *L'Avare*. It was once said in Johnson's hearing that Pope for his *Essay on Man* was supplied with the matter by Bolingbroke, and all that Pope did was to turn Bolingbroke into verse. Johnson, who was both a great writer himself and an excellent critic, doubted the report, and held that all that Pope received was the "philosophick stamina, but that the poetical imagery was Pope's own." Now Johnson was himself a writer of poems, which, though not great poetry, were poetry, and knew something about what poetry was. Yet allowing its weight to Johnson's judgment, we should still find it hard to mark any difference between Molière's verse and prose but one of form, and his art raises acutely the question whether real drama, whether in prose or verse, is not to be called poetry. Those who hold poetry and prose to differ only in form have still to contend with the popular conviction that there is a poetic vision of things. They will have to explain what poetic vision is unless they deny its existence. Wordsworth, as every one knows, affirmed that there were many with this vision who were only not poets because they "wanted the accomplishment of verse." I think he altogether minimized the importance of words for the poet, as if verse were a mere matter of technique. But before I have done I hope to indicate why it is that this poetic vision finds its expression in verse rather than prose.

Perhaps the best way of approaching the subject is to ask ourselves what kind of topics are naturally in a developed language treated in prose and what in poetry. I say a developed language, for in the early condition of a language like Greek, for instance, all subjects are treated in poetry. Thus early philosophy, such as that of Empedocles or Parmenides, was written in poetry. Poetry precedes prose as the language of literature. Prose treats of science, and history from the mere chronicle or newspaper up to the great synthetic histories, which are both narrative and scientific or philosophical, which not merely describe events as they happened, but reveal their meaning and the play of character and tendency expressed in the events. I may take so late an instance as Mr. Trevelyan's *History of England under Anne*. Narratives and science are then for the most part written in prose. Poetry, on the other hand, in its most obvious forms is lyric or dramatic, the direct outpouring by the poet of his own heart, or the equally direct outpouring by his characters of their hearts. But besides these poems there is narrative poetry or epic, that is descriptive poetry of various sorts, which may be interspersed with dramatic episodes, like the prayer of Adam in Milton or the speeches of the heroes in Homer. Now narrative poetry comes nearer to prose than lyric or drama. And again there are intermediate forms of prose which are nearer to poetry than history is. We may, I think, say pro-

visionally, prose is most clearly prose when it approaches to bare narrative or history, and poetry most clearly poetry when it approaches to lyric or drama; and as I suggested just now, lyric may be regarded as a special form of drama where the speaker happens to be the poet himself. Further, when science and chronicle are included, we have to remember that as bare science or bare faithful reports they belong to craft and not to artistic prose at all. Let us say then that prose tends to be narrative, and poetry to be dramatic, but there are all manner of intermediate forms of both prose and verse. There is oratory, including sermons, and there are the didactic and satiric forms of poetry which I mentioned a moment ago. Now in trying to find out what makes the differences of prose and poetry, the best and, indeed, at first sight, the only way is to proceed inductively, if I may use grand language, that is to compare actual passages of admitted prose or poetry, and amongst these to set beside one another more or less parallel passages, in which the topic is more or less the same. We may then be able to detect what it is that gives the peculiar flavour of prose or poetry to the contrasted pieces. Many other passages might doubtless have been chosen besides the following, which are nearly all familiar ones.

I. Scenery

From Plato's *Phædrus* (Jowett's translation).

S. But let me ask you, friend, have we not reached the plane-tree to which you were conducting us?

Ph. Yes, here is the tree.

S. Yes indeed and a fair and shady resting place, full of summer sounds and scents. There is the lofty and spreading plane-tree, and the agnus castus high and clustering, in the fullest blossom and the greatest fragrance; and the stream which flows beneath the plane-tree is deliciously cold to the feet. Judging from the ornaments and images, this must be a spot sacred to Achelous and the nymphs; moreover there is a sweet breeze, and the grasshoppers chirrup; and the greatest charm of all is the grass like a pillow gently sloping to the head. My dear Phaedrus, you have been an admirable guide.

Ph. [I always wonder at you, Socrates; for when you are in the country you really are like a stranger, who is being led about by a guide. Do you ever cross the border? I rather think that you never venture even outside the gates.

S. Very true, my good friend; and I hope that you will excuse me when you hear the reason, which is that I am a lover of knowledge, and the men who dwell in the city are my teachers, and not the trees or the country. Though I do indeed believe that you have found a spell with which to draw me out of the city into the country, as hungry cows are led by waving before them a bough or a fruit. For only hold up a book before me and you may lead me all round Attica and over the wide world.]

I read the bracketed part, though not strictly relevant, partly for its delight, partly because as Socrates doesn't feel the country, he goes naturally into prose.

From *Midsummer Night's Dream.*

I know a bank whereon the wild thyme blows,
Where oxlips and the nodding violet grows;
Quite overcanopied with luscious woodbine,
With sweet musk-roses and with eglantine:
There sleeps Titania, some time of the night,
Lulled in these flowers with dances and delight;
And there the snake throws her enamelled skin,
Weed wide enough to wrap a fairy in.

They might be speaking themselves, the flowers and the rest of the scene!

From Tennyson's *Oenone.*

And at their feet the crocus brake like fire,
Violet, amaracus and asphodel,
Lotus and lilies. And a wind arose,
And overhead the wandering ivy and vine
This way and that in many a wild festoon
Ran riot, garlanding the gnarled boughs
With bunch and berry and flower, through and through.

From Wordsworth's *Prelude,* I. 438.

So through the darkness and the cold we flew,
And not a voice was idle; with the din
Smitten, the precipices rang aloud;
The leafless trees and every icy crag
Tinkled like iron; while far distant hills
Into the tumult sent an alien sound
Of melancholy not unnoticed, while the stars
Eastward were sparkling clear and in the west
The orange sky of evening died away.

II. Picture of a Woman

From Steele (*Tatler,* No. 49).

Aspasia must therefore be allowed to be the first of the beauteous Order of Love, whose unaffected freedom and conscious innocence give her the attendance of the graces in all her actions. That awful distance which we bear towards her in all our thoughts of her, and that cheerful familiarity with which we approach her, are certain instances of her being the truest object of love of any of her sex. In this accomplished lady love is the constant effect, because it is never the design. Yet though her mien carries much more invitation than command, to behold her is an immediate check to loose behaviour, and to love her is a liberal education; for it being the nature of all love to create an imitation of the beloved person in the lover, a regard for Aspasia naturally produces decency of manners, and good conduct of life in her admirers.

From *The Faery Queene,* II. iii. 24.

Her ivorie forehead full of bountie brave
Like a broad table did itself dispred,
For Love his loftie triumphs to engrave
And write the battels of his great godhead;

All good and honour might therein be red:
For there their dwelling was. And when she spake,
Sweet wordes, like dropping honny, she did shed,
And twixt the perles and rubins softly brake
A silver sound that heavenly music seemed to make.

III. On a Poet

From Dryden.

To begin then with Shakespeare. He was the man who of all modern and perhaps ancient poets had the largest and most comprehensive soul. All the images of nature were present to him, and he drew them not laboriously but luckily. When he describes anything, you more than see it, you feel it too. Those who accuse him to have wanted learning give him the greater commendation. He was naturally learned; he needed not the spectacles of books to read nature; he looked inwards, and found her there.[1] I cannot say he is everywhere alike; were he so I should do him an injury to compare him with the greatest of mankind. He is many times flat, insipid; his comic wit degenerating into clenches, his serious swelling into bombast. But he is always great when some great occasion is presented to him. No man can say he ever had a fit subject for his wit and did not then raise himself as high above the rest of poets:

Quantum lenta solent inter viburna cupressi.

From Wordsworth's *The Poet's Epitaph.*

But who is he with modest looks,
And clad in homely russet brown?
He murmurs near the running brooks
A music sweeter than their own.

He is retired as noontide dew,
Or fountain in a noon-day grove:
And you must love him ere to you
He will seem worthy of your love.

The outward shows of sky and earth,
Of hill and valley he hath viewed;
And impulses of deeper birth
Have come to him in solitude.

In common things that round us lie
Some random truths he can impart;—
The harvest of a quiet eye
That broods and sleeps on his own heart.[2]

But he is weak; both Man and Boy,
Hath been an idler in the land;
Contented if he might enjoy
The things which others understand.

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[1] This is the point I shall develop.

[2] Wordsworth here says the same thing about himself as Dryden says of Shakespeare.

From Meredith's *The Spirit of Shakespeare.*

Thy greatest knew thee, Mother Earth; unsoured
He knew thy sons. He probed from hell to hell
Of human passions, but of love deflowered
His wisdom was not, for he knew thee well.
Thence came the honeyed corner at his lips,
The conquering smile wherein his spirit sails
Calm as the God who the white sea-wave whips,
Yet full of speech and intershifting tales,
Close mirrors of us; hence had he the laugh
We feel is thine: broad as ten thousand beeves
At pasture.

IV. A Battle

From Trevelyan's *Blenheim,* p. 383.

The morning hours slipped by, and still with impassive countenance he watched the men he treasured fall under the cannon shots. Messenger after messenger galloped off to hasten Eugene, struggling through marsh and woodland far away. But till his colleague was ready to attack, the Duke would not give the word. What were his thoughts as he lunched among his staff in the open field, perhaps for the last time? He well knew it was the day that either made him or undid him quite: his fortunes could not survive defeat. And with his own ambitions the liberties of England and Europe had come to the last hazard, to be decided, not in any famous city or crowded meeting-place of men, but here in a naked plain of reaped stubble, between villages and farms of names unknown—that tallest spire was called Blindheim, the guides said—places where unlettered peasants had for ages tilled the soil and for ages more would till it, caring nothing what the great world in its madness had come there to do that day—save only that their poor houses and barns would assuredly be burned. Yet in this uncouth rustic spot, the texture of Eighteenth Century civilization and thought was to take its colour for good or ill. Hasten Eugene! Flesh and blood can no longer stand still under this carnage of a cannonade, and the very gods are impatient to see the invisible event. Here at last comes his messenger galloping from the north. He is ready and we are more than ready. It is past noon, but August days are long. Cutts the Salamander is to lead the British and Dutch again at Blindheim. And everywhere, along four miles of the Nebel's course, the regiments and squadrons shake themselves and move down towards the marshy edges of the brook.

From Addison.

But O, my muse, what numbers wilt thou find
To sing the furious troops in battle joined?
Methinks I hear the drum's tumultuous sound
The victor's shouts and dying groans confound;
The dreadful burst of cannon rend the skies,
And all the thunder of the battle rise.
'Twas then great Marlbro's mighty soul was proved,
That, in the shock of charging hosts unmoved,
Amidst confusion, horror and despair,
Examined all the dreadful scenes of war;
In peaceful thought the field of death surveyed,
To fainting squadrons lent the timely aid,

Inspired repulsed battalions to engage,
And taught the doubtful battle where to rage.
So when an angel by divine command
With rising tempests shakes a guilty land,
Such as of late o'er pale Britannia passed,
Calm and serene he drives the furious blast,
And pleased the Almighty's orders to perform
Rides in the whirlwind and directs the storm.

I add that these passages compare very well, because the first is not perfect prose, not the finest passage I could select from its author —a little artificial and rhetorical to my mind, though beautiful; and the second is not first-rate poetry, and that the prose passage is the greater of the two.

V. On Grief

From Burke's *French Revolution.*

The English people are satisfied, that to the great the consolations of religion are as necessary as its instructions. They too are among the unhappy. They feel personal pain and domestic sorrow. In these they have no privilege, but are subject to pay their full contingent to the contributions levied on mortality. They want this sovereign balm under their gnawing cares and anxieties, which being less conversant about the limited wants of animal life range without limit, and are diversified by infinite combinations in the wild and unbounded regions of imagination. Some charitable dole is wanting to these, our often very unhappy brethren, to fill the gloomy void that reigns in minds which have nothing on earth to hope or fear, something to relieve in the killing languor and overlaboured lassitude of those who have nothing to do; something to excite an appetite to existence in the palled satiety which attends on all pleasures which may be bought, where nature is not left to her own process, where even desire is anticipated, and therefore fruition defeated by meditated schemes and contrivances of delight; and no interval, no obstacle, is interposed between the wish and its accomplishment.

From *King John,* Act III, Sc. iv.

Const. And, father cardinal, I have heard you say,
That we shall see and know our friends in heaven:
If that be true, I shall see my boy again;
For, since the birth of Cain, the first male child,
To him that did but yesterday suspire,
There was not such a gracious creature born.
But now will canker sorrow eat my bud,
And chase the native beauty from his cheek,
And he will look as hollow as a ghost;
As dim and meagre as an ague's fit;
And so he'll die; and, rising so again,
When I shall meet him in the court of heaven
I shall not know him; therefore never, never
Must I behold my pretty Arthur more.
Pand. You hold too heinous a respect of grief.
Const. He talks to me that never had a son.
K. Phil. You are as fond of grief as of your child.

Const. Grief fills the room up of my absent child,
Lies in his bed, walks up and down with me;
Puts on his pretty looks, repeats his words,
Remembers me of all his gracious parts,
Stuffs out his vacant garments with his form:
Then have I reason to be fond of grief.

VI. On Music

From Newman, *University Sermons* (quoted in R. H. Hutton's *Cardinal Newman*).

There are seven notes in the scale; make them fourteen, yet what a slender outfit for so vast an enterprise! What science brings so much out of so little? . . . To many men the very names which the science employs are utterly incomprehensible. To speak of an idea or subject seems to be fanciful or trifling; to speak of the views which it opens upon us to be childish extravagance; yet is it possible that that inexhaustible evolution and disposition of notes, so rich, so simple, so intricate, yet so regulated, so various, yet so majestic, should be a mere sound which is gone and perishes? Can it be that these mysterious stirrings of heart and keen emotions, and strange yearnings after we know not what, and awful impressions from we know not whence, should be wrought in us by what is unsubstantial, and comes and goes, and begins and ends in itself? It is not so; it cannot be. No; they have escaped from some higher sphere; they are the outpourings of eternal harmony in the medium of created sound; they are echoes from our Home; they are the voice of Angels, or the magnificat of Saints, or the living laws of Divine Government, or the Divine Attributes; something are they besides themselves, which we cannot compass, which we cannot utter—though mortal man, and he perhaps not otherwise distinguished above his fellows, has the gift of eliciting them.

From Browning's *Abt Vogler.*

But here is the finger of God, a flash of the will that can,
Existent behind all laws, that made them and, lo, they are!
And I know not if, save in this, such gift be allowed to man,
That out of three sounds he frame, not a fourth sound, but a star.
Consider it well: each tone of our scale in itself is nought;
It is everywhere in the world—loud, soft, and all is said:
Give it to me to use! I mix it with two in my thought
And, there! Ye have heard and seen: consider and bow the head.

Of the two great passages the prose is I should say the greater. Yet the poem's inability to express the effect in words and leaving it to the reader to imagine that he hears and sees is itself significant for our purpose.

Now what seems to me to be the net result of this imperfect comparison of passages is this. The secret of prose is suggested by the proximity of the less imaginative or impassioned prose to bare history or chronicle. Think of the Blenheim piece or the Plato landscape. It is that in prose we have a subject given to the artist which he analyses or dissects. The situation may be a real one as the Battle of Blenheim, or it may be imagined by the writer like a novel of Jane

Austen. But what the artist is doing is to unpiece it, and at the same time bring the pieces again together into a picture of the whole situation. He would not be an artist did he not thus reconstruct. In this twofold work he may use all instruments to produce vividness in his picture. Sometimes his instrument is, as with Swift, plain speech unadorned, quiet but forcible, not rich, but as abundant as the subject requires. The plain style may, as with Swift often and Hobbes always, be leanness, not poverty of style; strong and sinewy, sparing of words, every one of which, however, tells, and this is perhaps the highest achievement of prose. Sometimes, as in Goldsmith or Newman or Froude, the art lies in the simple ease and grace with which the language fits the subject as a glove fits the hand, to borrow a phrase used by James about Bergson's admirable prose. Other models are the simpler passages of Plato and almost every part of Pascal. You have to contrast such language with the language of ordinary life or of mere chronicle to get some idea of the consummate art it involves. For in practical language, or in newspapers for instance, the object is to satisfy some useful purpose, to get things done, to keep readers informed of actual passing events. But the artist is concerned not with practical uses, but to bring home his subject energetically, even if quietly, to the reader. Only it is done by description and analysis. The same thing is true even of impassioned prose like Burke's. He is out to persuade, and he may employ a wealth of imagery which we are apt to call poetic, because the poet who is a creature of imagination is full of it, though he uses it differently. The one instrument which the prose artist does not use, or uses only accidentally or rarely, is poetry, for he is unbuilding and building up again, but his chief interest is in the unbuilding. Thus there is in the prose an element of purpose. The subject is given, and though the material in which the writer works is words and nothing else, the subject intended by the words is given to him, although he may have imagined it and given it to himself. The life of the passage comes to it from the subject which is waiting as it were to be described.

But now, to point the meaning of this, consider the poetry. It too describes and analyses, but the analysis is rather the instrument than the end. What is salient in the poem is the whole picture, and so the poem is something concrete like a living thing, which lives in itself. The poem is in its essence dramatic or lyric. There is a live being in whose life the poet makes us live. The prose-writer gives it to us to see, and gratifies our desire to know and recognize things. He may, like Carlyle, be vivid and picturesque. But it is one thing to present the subject vividly before the mind, another thing to put the mind within the subject so as to live its life. Now the poet is not giving us things to look at, but presenting us with new existences. "Grief fills the room up of my absent child." That is not a picture

of grief, but is grief enacted.[1] Let me stop to illustrate by two other passages. A few words will by their force and vividness produce in the reader a thrill of astonishment or horror, or whatever it may be. But the manner is different in prose and poetry. Contrast Newman's "He has committed a great transgression; he has attempted to poison the wells,"—in the preface of the *Apologia*—and Wordsworth's famous "We had crossed the Alps," as they occur in their respective contexts. The first is a most vivid and impressive article in the indictment of Kingsley. The second is the very experience occurring again under the conditions of the reader. That is why Mr. Read calls poetry creative, and that is what is true in his statement. The poet is making through his words a living event or character.

Elsewhere[2] I have attempted to contrast with one another the prose of Pascal's *Pensées* with the poetry of Bridges' *Testament of Beauty*. They are particularly useful to contrast, because the *Pensées* so often approaches poetry, and sometimes in isolated passages, like "The eternal silence of these infinite spaces terrifies me," breaks out into actual poetry, and yet remains prose, while Bridges' poem so often approaches prose and sometimes actually falls into versified prose, and yet is throughout poetry, even if not so manifestly so as Lucretius. The characteristic note seemed to me to be what I have said. And for the real poetic character of Lucretius, quite apart from his splendid lyrical passages, how his treatment of the atoms is so different from a science of them because it makes the atoms living beings and their meetings the behaviour of life—for this I have only to refer to Mr. Santayana's essay[3] on that poet.

Thus I take drama to be the typical manner of poetry, including "lyric thereunder." We may pass from this to understanding why the poetic treatment of a subject relies on metre as well as rhythm. For rhythm and metre are both of them unifying instruments, they help to build up wholes. But the prosaist uses rhythm not so much for that end as because all movement and therefore the movement of language falls into rhythm in order to be sustained continuously. The poet is constrained to use every resource of rhythm and of metre in addition because they help to give his work the organic coherence of the living thing. Coleridge said this long ago. The poem is an organic thing, and its separate parts are not mere incidents but limbs of the whole. Rhyme and alliteration are further helps towards

[1] For another case which occurs to me take the concentrated poetry of the line of Racine in which Hippolytus confesses his love to Aricia: "Présente, je vous fuis; absente, je vous trouve."

[2] *Pascal the Writer*, in Rylands Library Bulletin (vol. 15, No. 2, 1931. University Press, Manchester).

[3] In *Three Philosophical Poets* (Harvard, 1910).

pulling the words of a poem together so as to make the subject a concrete and living thing.

Thus if I am right, and I do not flatter myself that I have been convincing, the difference of prose and poetry is not merely one of form, but is a real difference of kind, though as with other kinds the two grade into each other by intermediate forms. They are not merely two styles of saying the same thing, what is said is different. The reason why the poet in general expresses himself in metre as well as rhythm is not that he chooses to do so but that he must. The vision which sees concretely enforces these aids to its expression. The outward form corresponds to the inward spirit. The poetic vision, which Johnson said would make Thomson, the author of the *Seasons*, view the two candles burning on the table with a poetic eye means that the subject appears differently from the prosaist's subject, and demands of itself an appropriate form. The verse is not the mere instrument the poet uses, so that he might still be a poet without verse; it is as much a part of the poetic attitude itself, as the movements of the chest are a part of respiration. When the verse is spoken it embodies the poetic vision; when the verse fails to be spoken, the presumption is that the vision is absent or imperfect too, for the verse is its material embodiment.

Finally, it would seem to follow from our instances that poetry is the higher art because of its distinguishingly concrete character, which takes it nearer to the nature of things. But poetry need not always be greater than prose. Some prose is certainly greater than some poetry. For greatness in art depends not on the form, which determines its beauty, but upon the subject, or what is often called by the un-English name of content. There are no degrees of beauty, except in the sense that works of art, poems, or prose works fall short of perfection of form in various degrees. But there are degrees of greatness, sometimes arising from the goodness or badness of art as art, sometimes from the nature or handling of the subject, and sometimes, and indeed generally, from both.

(*To be continued.*)

MAN THE MEASURE OF ALL THINGS: SOCRATES VERSUS PROTAGORAS (I)

P. S. BURRELL, M.A.

THE study of Plato has become involved in so many entanglements of higher criticism that it is difficult even to approach the interpretation of any particular dialogue without bias or preconceptions. A swarm of problems starts up for settlement as a preliminary consideration to the correct understanding of Plato's aims in writing the dialogue, and there is a danger lest its precise issue and philosophical value may be obscured by discussions about its place in the chronological order of the dialogues, as to whether it expresses the views of Socrates or of Plato, or represents a particular stage in the development of Plato's own thought, and so on. That this danger is real is forcibly suggested by a remark of Professor Taylor: "To understand a great thinker is, of course, impossible, unless we know something of the relative order of his works and of the actual period of his life to which they belong. . . . We cannot, then, even make a beginning with the study of Plato until we have found some trustworthy indication of the order in which his works, or at least the most significant of them, were written."[1] Similarly, Sir James Frazer in his preface to *The Growth of Plato's Ideal Theory*, writes: "The question of the growth of Plato's Ideal Theory is intimately bound up with the question of the chronological order of the Platonic dialogues." Unfortunately, we know very little of Plato's life—so little that Professor Taylor can say: "the actual history of Plato's life up to his sixtieth year is almost a blank";[2] and critics have differed seriously both about the growth of the Ideal Theory, about the chronological order of the dialogues, and about the respective contributions of Socrates and Plato to the philosophy contained in them. The difficulty of determining the significance of a dialogue in the light of such theories is illustrated by the *Theætetus*. The tendency of modern scholarship is to regard it as one of the later dialogues reflecting distinctively Platonic modes of thought, and gives this as a reason for its silence about the Socratic doctrine of forms and its replacement by the beginning of a theory of categories.[3] An exactly opposite explanation, however, is given by Sir James Frazer, who considers that there is no distinct mention of the Ideas,

[1] Plato, *The Man and His Works*, p. 16.
[2] *Ibid.*, p. 3.
[3] Burnet, *Greek Philosophy*, §§ 178, 186.

just because the dialogue is well fitted to serve as an introduction to the Ideal Theory and that Plato seems to have produced it with this end in view.[1] Thus two contradictory reasons are assigned for the absence of reference to the Ideas in the *Theætetus*: the first, because it expresses views which have got beyond them; the second, because it is an introduction to them. Obviously both cannot be right, though both may be wrong. At any rate, the contradiction may suggest a doubt as to the wisdom of trying to determine the meaning of the dialogue by reference to theories either of the development of Platonism, or of the order of composition of his works. Indeed, we may well apply to such questions Jowett's remark about the Homeric question: "It is a question worth asking, but cannot have a distinct answer." Take, for instance, the problem of the historical Socrates. Shall we ever be quite certain whether in any particular dialogue Plato is dramatically expressing the views of Socrates only or his own development of those views, or his own views exclusively? And does it greatly matter if we cannot? In the circumstances, it seems worth while to try the experiment of considering the dialogue apart from such higher criticism and by a careful study of the form and content of the argument in close connection, with the aid of such hints from other dialogues as seem relevant, endeavour to find out what particular aspect of truth the dialogue was designed to establish or conversely—what is, perhaps, not less important—what particular form of error it was intended to overthrow. Its philosophical value cannot depend on the date of its composition or on the excellence of its dramatic portraiture. It must depend on the importance of the problem discussed and the skill with which it is handled.

Ostensibly, as the old classification of it as a dialogue of search (διαλογος πειραστικός) indicates, it is a straightforward but unsuccessful discussion as to how knowledge should be defined, for though it shows what knowledge is not, it fails to discover what knowledge is. But though in characteristic Socratic fashion it reaches only a negative result, the argument is conducted with such skill that, as Professor Taylor says: "It is not too much to say that after more than two thousand years, the ultimate issues in "Epistemology" are still those which are expounded with unequalled simplicity in the *Theætetus*, the best general introduction to the problem of knowledge ever composed."[2] This is high praise, but it would be underrating its value to regard it merely as an epistemological essay in the conventional sense: for it is something much more important than the review and refutation of certain inadequate theories of knowledge or than the positive suggestions which are

[1] *Vide The Growth of Plato's Ideal Theory*, p. 19.

[2] *Platonism*, in Our Debt to Greece and Rome Series, p. 56.

thrown out in the discussion.[1] It is concerned with an issue simpler and more profound—an issue which interests the man in the street just as much as the student of philosophy. It is more suitably expressed in Pilate's question: "What is truth?" or, perhaps, in the question: "Is there any such thing as Truth?" than in the sort of questions formulated in the schools, *e.g.*, How is experience possible? or what is "the original, certainty, and extent of human knowledge"? When the problem is stated in the latter way, the attention seems to be concentrated on the one hand on the nature of the *object* of knowledge—on *what* the mind can know. Can it know a world or reality existing independently of itself, whether directly or indirectly? or is its knowledge restricted to its own states or ideas? Hence the crop of theories falling under the heads of subjective idealism, phenomenalism, absolute idealism, and the various forms of realism. On the other hand, attention is directed to the *faculty* of knowledge. Granted that the mind is, as Locke says, furnished, how does it come to be so? Does the furniture come from the native powers of the mind or from experience, or through the co-operation of the two? Hence the controversy between rationalism and empiricism. Or, again, knowledge, at least in the form of *a priori* synthetic propositions, may be assumed as a fact to be explained, and it may be asked how such knowledge is possible or valid. But if the object to which it refers is limited to the phenomenal realm, its objective validity is not worth very much, and it is not surprising that the knowledge which Kant vindicates should have been a notable source of agnosticism regarding the one thing worth knowing, viz. reality. In all these epistemological speculations, it is noticeable that the vital question is whether "the human mind as such" is or is not capable of knowing reality. It is recognized, of course, that the psychological experiences of different individuals may differ in detailed content. But it seems to be tacitly assumed that human minds are all built on the same pattern, and the question is whether the pattern is so constituted as to grasp reality or not. Thus Professor Alexander writes: "The mind knows. Mind is for us the highest order of finite empirical existent."[2] Professor Laird speaks in the same strain, "granting that we perceive sense data, is it true that we perceive nothing else,"[3] where "we" denotes any typical percipient; and he heads his chapter on sense-perception "The Things we Perceive." And the burning question seems to be *what* exactly this typical observer observes—a sensum (sense datum), or state of the subject, or a thing of which the sensum is a sign or gesture, or a sign-fact, and whether a given sensum is open to the observation

[1] I refer, *e.g.*, to the line of thought in pp. 184–186.
[2] *Space, Time and Deity*, vol. ii, pp. 81–82.
[3] *A Study of Realism*, p. 18.

of more than one percipient—whether the sensa are public and objective, or private and subjective, or public and private.[1] In the issue raised, the fortunes of the different members of the human race seem to be regarded as equal.

Conventional epistemology does not concern itself directly with the apparently humbler question with which Socrates was wrestling. "Shall we say that the opinions which men have are always true or sometimes true or sometimes false?"[2] "Is my" (*i.e.* anyone's) "perception always true and infallible?"[3] "Is nobody wiser than anybody else?" or, in the language of Protagoras, "Is man" (*i.e.* every man) "the measure of all things?"[4] Its attitude is, of course, perfectly natural, for, on the one hand, if nobody's knowledge is really worth anything so far as the apprehension of reality is concerned, it matters very little whether A's essentially valueless knowledge is any better or worse than B's equally valueless knowledge. If, on the other hand, the possibility of knowing the absolute reality is ardently asserted, as by Mr. Bradley, the good news is seriously qualified by the doctrine that all knowledge short of this consists of partial truths, each equivalent to an error, and that "everyone, as a function of the perfect universe, is perfect already."[5] Similarly, it is a matter of comparatively small moment whether reason or sense is the instrument of knowledge, if the instrument, whichever it is, is incapable of reaching reality, just as a gun is useless, no matter what it is made of, if it is trained on objects which are permanently beyond its range.

It is not because it deals with such stock epistemological questions that the *Theætetus* deserves to be called the best general introduction to the problem of knowledge, but because it faces a problem which is at once more fundamental and more practical, and because it deals with it, as Professor Taylor says, "with unequalled simplicity." The problem is to vindicate theoretically and practically the principles of the Socratic dialectic or, in more general terms, to establish the first principles of logic against the deadliest assault that has ever been made upon them. It is perfectly clear that the problem was one in which Socrates was specially interested. To the man who held that virtue is knowledge and vice is ignorance, the question "What is knowledge?" was urgent and inevitable. It was, therefore, appropriate that in the introduction Socrates should be represented as guaranteeing the accuracy of the dialogue, of which Euclides was the conscientious and painstaking reporter, and it is no wonder that it should be described as "well worth hearing," seeing that it came from "the best and wisest and most righteous man that Plato

[1] Cp. Kemp Smith, *Prolegomena to an Idealist Theory of Knowledge*, p. 71.
[2] *Theæt.*, 170C. [3] *Ibid.*, 160C and 152C. [4] *Ibid.*, 152A,
[5] *Appearance and Reality*, 1st ed., p. 509.

had known."[1] How vitally Socrates was concerned in the issue under discussion Plato is careful to point out in the body of the dialogue. In the first criticism of the Protagorean doctrine that man is the measure of all things, Socrates says: "If that opinion is true to each person which he acquires through sensation, and no man can discern another's condition better than he himself, and one man has no better right to investigate whether another's opinion is true or false than he himself, but, as we have said several times, each man is to form his own opinions by himself, and these opinions are always right and true, why in the world, my friend, was Protagoras wise, so that he could rightly be thought worthy to be the teacher of other men and to be well paid, and why are we ignorant creatures and obliged to go to school to him, if each person is the measure of his own wisdom? Must we not believe that Protagoras was 'playing to the gallery' in saying this? *I say nothing of the ridicule that I and my science of midwifery deserve to incur in that case—I should say the whole practice of dialectics, too. For would not the investigation of one another's fancies and opinions and the attempt to refute them, when each must be right, be tedious and blatant folly, if the Truth of Protagoras is true, and he was not jesting when he uttered his oracles from the shrine of his book*" (161D–162A).[2]

In his sly, ironical manner Socrates slips in the last sentence of this passage as if it were a matter of secondary importance compared with the suggestion that Protagoras annihilated the pretensions of the whole body of the Sophists, and convicted himself of taking money under false pretences by making all opinions of equal value. It did not greatly matter to Socrates if the chief of the Sophists chose to commit intellectual suicide by his popular and plausible theory. But it did matter very much if it stultified himself and his arts of intellectual midwifery and dialectics. It would be a regular turning of the tables, if he who had spent so much time and caused so much amusement in making fools of people who pretended to be wise, should himself be made a fool of by Protagoras, and be proved to have wasted his time in searching for someone wiser than himself![3] For Protagoras' doctrine placed himself, who knew that he did not know, on exactly the same level as those who thought they knew. He was therefore absolutely obliged to take up the challenge and demonstrate, as he ironically puts it, that "I who am without knowledge, am not in the least obliged to become a measure, as the argument in his (Protagoras') behalf just now tried to compel me to be, whether I would or no."[4]

The "Truth" of Protagoras did, in fact, cut two ways. It not only subverted the "wisdom" of the "wise" Sophists, but also the method,

[1] *Phædo*, p. 118.
[2] Trans. in the Loeb Series.
[3] *Apol.*, 21B ff.
[4] *Theæt.*, 179B.

which without wisdom[1] put their wisdom to the test. It absolutely disqualified Socrates from cross-examining anybody, because everybody was placed above (or below) criticism. If all opinions are true, it is impossible to prove that any of them are false. Both refutation by the Socratic elenchus and the possibility of self-refutation were out of the question. Accordingly, unless it could be disproved, the maieutic[2] art, which claimed to distinguish between true and false thoughts, was a farce, cross-examination was an impertinence, and self-contradiction, which it aimed at producing, was impossible.

How fatal the doctrine of *homo mensura* was to the position of Socrates may be gathered from the accounts in Plato of maieutic and dialectic and from a study of the Socratic elenchus in the discussion of particular problems. The maieutic process, as it is explained in the *Theætetus*,[3] consists in drawing out and clarifying the thoughts conceived in the mind of an interlocutor and testing them to see whether they are true or false, "wind eggs," and lying phantoms, to be thrown away, or real children of the mind, worth rearing. The testing process consisted in the process of cross-examination by question and answer to determine whether any given view was self-consistent or self-contradictory. If the latter, the interlocutor could be convinced that he was mistaken, and did not know what he thought he did know. He could thus be reduced to a humble frame of mind and be willing and qualified to learn the truth.[4] This method was a novelty, the discovery of Socrates. It was the critical or logical method, as contrasted with the authoritative method of tradition, the dogmatic method of the early philosophers, the rhetorical epideictic method of the Sophists, the eristic method of the verbal quibblers, the method of indirect refutation of Zeno. The dialectic of Socrates was a method of direct refutation. He takes every possible care to see that his adversary says exactly what he means and means what he says. His position is precisely formulated; and then, by the production of instances which must be admitted, Socrates convicts him of self-contradiction. In this way a false doctrine is made to refute itself. The essence of the method is that it appeals to reason, to the common reason of both parties to the argument and not to any outside authority or arbitrator. It thus implies the existence of an inward, not an external criterion. Plato has thought it worth while to describe the nature of the process in more than one passage. One of the clearest accounts of it occurs in the *Republic*, where the argument seems to have reached an impasse, because while one side (Thrasymachus) asserts that injustice is more profitable than justice, Socrates affirms the contrary, and there seems to be no way of deciding the question. There Socrates

[1] ἄγονός εἰμι σοφίας, *Theæt.*, 150B.
[2] "Intellectual Midwifery."
[3] 149A–151E.
[4] Cp. *Theæt.*, 210C.

gets out of the deadlock by expressly rejecting any appeal to an external criterion, and explains the critical method of appealing to the common reason, *i.e.* to some principle admitted by both. "If, then," he says, "we oppose him (Thrasymachus) in a set speech enumerating in turn the advantages of being just, and he replies and we rejoin, we shall have to count up and measure the goods listed in the respective speeches and we shall forthwith be in need of judges to decide between us. But if, as in the preceding discussion, we come to terms with one another as to what we admit in the inquiry, *we shall be ourselves both judges and pleaders.*"[1] Similarly, in the *Theætetus*, he remarks: "we have neither judge nor, as the poets have, any spectator set over us to criticize and rule over us."[2]

The most illuminating passage of all, which deserves to be quoted at length, occurs in the *Sophistes*, where it is put into the mouth of the Stranger. After pointing out that "thinking that one knows a thing when one does not know it" (ἀμαθία) is "the source of all the mistakes of the mind," he distinguishes the traditional admonitory method of getting rid of it from the method of those who, believing that all ignorance is involuntary, and that he who thinks himself wise would never be willing to learn any of those things in which he believes he is clever, and that the admonitory kind of education takes a great deal of trouble and accomplishes little, set themselves to cast out the conceit of cleverness in another way. He goes on to describe the method as follows: "They question a man about the things about which he thinks he is talking sense when he is talking nonsense; then they easily examine his opinions since they are those of men who wander; and in their discussions they collect those opinions and compare them with one another, and by the comparison they show that they contradict one another about the same things, and in relation to the same things, and in respect to the same things. But those who see this grow angry with themselves and gentle towards others, and this is the way in which they are forced from their grand and obstinate opinions about themselves. The process of freeing them, moreover, affords the greatest pleasure to the listeners and the most lasting benefit to the person subjected to it. For just as physicians who care for the body believe that the body cannot get any benefit from any food offered to it until all obstructions are removed, so, my boy, those who purge the soul believe that the soul can receive no benefit from any teachings offered to it until someone by cross-questioning reduces him who is cross-questioned to an attitude of modesty, by removing the opinions that obstruct the teachings and thus purges him and makes

[1] *Republic*, 348A–B.

[2] *Theæt.*, 173C. Cp. *Gorgias*, 472A–C, 487E, and *Protag.*, 338B–E, for similar descriptions of the method.

him think that he knows only what he knows and no more. . . . For all these reasons, Theaetetus, we must assert that cross-questioning is the greatest and most efficacious of all purifications and that he who is not cross-questioned, even though he be the Great King, has not been purified of the greatest taints and is uneducated and deformed in those things in which he who is to be truly happy ought to be most pure and beautiful."[1] This is clearly the philosophical analysis of the Socratic elenchus—proving a person wrong—the practice of which he describes so humorously in the *Apology*, and, as we should expect, it unites the intellectual and moral advantages, which, according to the view that virtue is knowledge, are inseparable. It is, in fact, the justification, almost in so many words, of the Socratic doctrine that philosophy is the proper purge for the soul—a more effective purge than any special science or sciences, which Pythagoras considered the counterpart of medicine for the body.[2]

Now it was the business, nay, the divinely appointed task,[3] of Socrates to administer this purge, and he employed the principle of it in all the discussions, which he carried on, to induce his fellowmen to "care for their souls"[4] rather than for anything else. Ordinarily, when he was arguing about the subjects, *e.g.*, ethical in which he was specially interested, he could assume that in practice the principle was taken for granted, and he used it with telling effect. But what if the principle itself were challenged? What if the possibility of contradiction were questioned? What if argument became a waste of time, because everybody was right? That would certainly produce an awkward situation. For how can you reason with a man who rejects the first principles of reasoning? How can you convict of self-contradiction an opponent who holds that contradiction is impossible? How can you prove an opinion to be false if falsehood is impossible, and impossible for the very simple reason that every opinion of every single person is true.[5] The challenge, too, seemed to have enormous prestige, having been made by the chief of the Sophists, who had, we are told, made more money by his "wisdom" than the great Phidias and ten other sculptors,[6] and who inspired such unbounded confidence and enthusiasm in his followers that "they all but carried him about on their shoulders."[7] The doctrine was broadcast in a book, *Truth*, which was closely studied by thoughtful young men,[8] and which, though it has perished, started a fashion in philosophy which under various labels has never gone

[1] *Soph.*, 230A–E.

[2] Cf. *Phædo*, 61A, *ὡς φιλοσοφίας μὲν οὔσης μεγίστης μουσικῆς*, and Burnet, *Greek Philosophy*, § 24.

[3] *Theæt.*, 150B, 210C.

[4] *Apol.*, 30A.

[5] *Theæt.*, 161D, 167D, and *passim*.

[6] *Meno*, 91D.

[7] *Rep.*, 600C.

[8] *Theæt.*, 152B.

out of date. Protagoras was, in fact, the most formidable opponent that Socrates ever had. In the *Theætetus*, or at least the first and larger part of it, Socrates made his counter-attack, and scored a complete triumph. In fact, he did his work so well that it was done once for all. That is why, since Protagoras' anarchical principle is always breaking out afresh, never perhaps more seriously than at the present day, when all standards are called in question, it is well worth while to study carefully the manner in which Socrates proved the *Truth* of Protagoras to be untrue.

Of course, he was not at all disconcerted by the radical nature of the challenge, for he had a "terrible passion for this kind of exercise,"[1] and he was always master of the intellectual situation. Protagoras had denied the principles of dialectic. Very well then; he should have a stronger dose of them than anybody else. There was, too, no difficulty in detecting the opening which Protagoras offered. No one is or can be guilty of error, he affirmed, because all opinions are true. The obvious thing, therefore, was to demonstrate that error does and can exist by producing an instance to the contrary. And what could be more effective than to find that instance in the very doctrine of Protagoras himself? He could thus make him a witness against himself by forcing him to acknowledge *in propria persona* the possibility of both error and contradiction, seeing that he himself was guilty of both. Thus Socrates kills, so to speak, two birds with one stone. He not only proves that Protagoras is wrong, but at the same time establishes the first principles of demonstration.

Let us now trace the steps of the argument, in order to show how exactly Socrates dealt with his opponent. He begins as usual by asking for a *general* definition. "What is knowledge?" And he addresses the question to Theætetus, a brilliant young student of a special science, who replies by mentioning: (1) "what he learnt from his master," *e.g.* arithmetic, geometry, astronomy, etc.; (2) useful arts and crafts, *e.g.* shoemaking and carpentry. These arts and sciences are the sphere in which the authority of the expert and his superiority to the layman are most clearly and generally recognized. But the definition is unsatisfactory because instead of explaining what knowledge is, it (1) gives a list of "knowledges," which might be prolonged to infinity; (2) tells only the "objects" of the respective knowledge, ignoring the subjective process of knowing; (3) involves a vicious circle, for as shoemaking, *e.g.*, means the knowledge of making of shoes, the definition "knowledge is shoemaking" is really equivalent to "knowledge is the knowledge of making shoes," and therefore affords no advance in the search of knowledge as such. What Socrates wants is a simple statement of the type "clay is earth mixed with moisture," or like the general

[1] *Theæt.*, 169C.

definition of commensurable and incommensurable quantities which Theætetus had himself worked out in mathematics.

The object of this preliminary conversation is clearly to distinguish the activity of knowing, and knowledge as such from its particular applications in the sciences and arts. Perhaps it suggests also that though the expert can speak with authority in his own department, he is, *qua* specialist, not so qualified to criticize and discuss first principles and ultimate questions. That requires a different art, the art of dialectic, which Socrates, the layman,[1] who has produced no system,[2] employs to test the truth or falsity of the intellectual systems of others.[3] Theodorus, the expert mathematician and teacher of Theætetus, confesses that he is not used to such discussions,[4] having turned rather too soon from abstract speculations to geometry,[5] while Theætetus, though interested in the subject,[6] had failed to arrive at such a general definition as Socrates wanted.[7]

Socrates, however, encourages him to try again by promising to help him by his art of intellectual midwifery to clarify and develop his ideas and then to test whether they are true or false.[8] At the same time he gives clear warning that the process of delivering him of the thoughts with which he is pregnant will be painful, and there may be the mortification of having his intellectual offspring thrown away. But he is only cruel to be kind, for "his art can both arouse the pain and make it cease."[9] Thus encouraged, Theætetus ventures on a definition, "knowledge is nothing else than sensation," which has at least the negative virtue of avoiding his previous mistakes. It does not give an instance for a principle, it does not confuse knowing with the object known; it is not circular. It is, moreover, universal, and is backed by the prestige of a great name. For, as Theætetus allows, it is a re-statement of the famous doctrine of Protagoras that "man is the measure of all things, of the existence of the things that are, of the non-existence of the things that are not." This is the formula which challenges the validity of the Socratic method of argument, and the first thing to do is to find out exactly what it means. This is done by stages.

I. Explanation of the Formula (152A–152C).—It is interpreted to mean "that individual things are for me such as they appear to me and for you in turn such as they appear to you—you and I being man."[10] This is a generalization from the common experience that "sometimes, when the same wind blows, one of us feels cold, and the other does not; or one feels slightly and the other exceedingly

[1] 154E, *ἰδιῶται*.
[2] 150C, *ἀγονὸς εἰμι σοφίας*, 157C, 161B.
[3] 151C–E, 157D, 160E.
[4] 146B.
[5] 165A.
[6] 150E.
[7] 148E.
[8] 150C–D.
[9] 151A.
[10] 152A. Loeb Trans.

cold."[1] It seems to follow that the wind itself is not cold, but only that it is cold for him who feels cold and not for him who does not.[2] And as it cannot *be cold to anybody*, unless it *appears* cold to him, *i.e.* unless he perceives it, the appearance of cold and the perception of cold are the same thing. Also, as things are to a person, only as they are perceived, perception is always of that which is and being knowledge, according to the definition, it is always infallible. At this level of experience,[3] it may be remarked, the theory seems to fit the facts. Knowledge is plainly impossible without sensation: you cannot be deceived about your feelings; and your reactions to your feelings in the shape of judgments or opinions (δόξαι, φαντασίαι) are hardly distinguishable from the feelings themselves. If you *feel* cold, you *are* cold and you are *sure* you are cold, much in the same way as the man who disliked Dr. Fell "knew full well" that he did not like him, without bothering about the reason why. But though so far in agreement with common sense, it disagrees with it in other respects, for it implicitly affirms, (1) the existence of what I perceive depends on my perceiving it; (2) that appearance and reality are identical; (3) that error is impossible.

Socrates was well aware of the devastating consequences of these implications in practical life; for it taught the individual and the state to be a law unto themselves, to do what was right in their own eyes, for the very sufficient reason that they were simply obeying the law of their own nature and could not do otherwise. But in this discussion he was concerned with the theoretical truth of this theory of "Truth," whether or not it did oblige every man to be a measure or standard of what is true and real,[4] and thus place him above criticism, proof against contradiction and incapable of refutation. Accordingly, he sticks almost exclusively to the logical and metaphysical issues involved in the maxim *homo mensura.*

II. Brief Account of the Metaphysical Basis (152D–153D).— Plausible as the theory sounds, it contains more than meets the eye, and Socrates suggests that it is merely a riddle passed off by Protagoras on the world for popular consumption, whilst its real meaning was a secret reserved for his disciples. Accordingly, he expounds briefly its abstruse metaphysical ground, the correctness of which is vouched for by Theætetus.[5] The riddle of the formula is as follows: "How can a wind, which itself is not cold, *be* cold to one person and *not* cold to another at the same time." The solution

[1] 152A. [2] 152B.

[3] This level of experience is illustrated in the dialogue by the feeling of temperature, the five senses, the apprehension of more or less of quantity in number and size, pleasure and pain, the appetite, and emotions of fear, and dreams.

[4] *Theæt.*, 167D, 179B.

[5] *Theæt.*, 153D. "Yes, Socrates, I think he means what you say he does."

is that the wind, like everything else, is not *one* thing with a settled determinate existence and character. When Protagoras identified appearance with reality he did not mean reality; he meant "becoming." That explains why what you call *big* can also appear *small*. It *becomes* both, just because it is always *on the move*. Paradox as it may seem, it has been unanimously preached by every thinker but Parmenides, and by all the chief poets.

Presumptive evidence in its favour (153A–D).—There are strong indications that motion is the universal principle of what seems to exist (τὸ εἶναι δοκοῦν), both in the inorganic and organic worlds, and also in the mental life. Fire is the offspring of motion and friction, and fire is the parent and preserver of everything, including the animals. Activity preserves, and stagnation destroys both body and soul. Everything is preserved as long as the heavens and the sun go round. If the motion should stop, everything would be upside down. Thus the theory agrees with the wisdom of the ages and the nature of things. The esoteric truth, in fact, is that the object of sensation which *is* for the man in the street, according to Protagoras, *is-to-him*, or, rather, "*appears-to-him*," or "becomes-to-him," as a result of motion.

III. Application of the Doctrine of Motion to Perception (153D–154C).—Since everything is on the move, (1) colour is neither in the eyes nor outside them, otherwise it would be not moving but stationary. (2) It is generated by the striking of the eye on the appropriate motion and is "something between" generated for each percipient, and therefore varies for every percipient, whether animal or man, and for every percipient at different times, because he always varies. No two colours are ever the same. The principle of motion thus explains the variety in the object of perception. It also explains why we apply and are obliged to apply different and even contradictory predicates to quantitative things like six dice, which we say are *more* than four and *less* than twelve. The only reason is that, if the thing had a fixed nature of its own, it would not have changed by merely being brought into contact with something else. Motion, in fact, seems to be the explanation of the endless puzzles caused by relativity, which give rise to so much quibbling.

IV. Common-sense Objection (154D–155D).—The layman, however, unprejudiced by theory, is obstinately convinced that nothing can become greater or less without being increased by addition or diminished by subtraction. He believes that everything has a quantity of its own, and does not become *more* or *less* simply by being related or compared to something else. Thus he does not believe that Socrates, for instance, has changed in size, because he is now taller than Theætetus, and *shorter* than Theætetus a year later, when the latter has grown. We do not find out what size a man

is merely by reference to someone else, but by measuring him at different times and finding out whether he has gained or lost in height. This is a conviction that there is a standard of measurement and not merely perpetually changing relations. The discrepancy, however, between theory and common sense is so great that Theætetus is utterly bewildered.

V. Removal of the Common-sense Difficulty by a Deeper Understanding of the Theory (155E–157D).—The objection is really based on the erroneous assumption that the world which "becomes," or "is generated," out of motion is made up of visible, tangible things which you can seize in your hands, such as the dice or Socrates and Theætetus, and on the denial of the existence of actions and processes, and of whatever is invisible. The truth, hidden from such crude materialism, is that the universe is made up not of *static* but *dynamic* elements. Everything depends on motion, and this is of two kinds, each endless in number, able to act on and be acted on by each other, and some being quick and some slow. Their meeting and friction beget "twins," which exist only for one another at the moment of meeting. In the sphere of vision, *e.g.*, sight and whiteness are begotten together by the meeting of the eye and some appropriate object, whereupon the eye becomes a seeing eye and the seen object becomes white, *e.g.* a stone. The active and passive potentialities of motion do not become actual until they meet, and they may exchange rôles, the active becoming passive, and *vice versa*. This is the explanation of the theory that nothing is one in itself, but is always becoming in relation to something else. So we have really no right to say that any so-called "thing" *is* or has any definite quality. Both are dissolved into motions or processes, which only *become* relatively to one another. It is only custom and ignorance that compel us to use the word *being* and we ought to abolish it, as well as words like "something," "somebody," "mine," "this," "that," etc., which "make things stand still," by endowing them with a definite existence. There is really no static element in the world, neither individual, nor quality, nor even value, *e.g.* good or beautiful. The world is a dynamic universe made up of possibilities, of becoming, perpetually on the move. Even that "masterful entity, the ego," disappears into a mirage of disconnected sensations. As for the paradox, then, that appearance and reality are identical, the difficulty of accepting it is removed by the above interpretation of reality. If reality is nothing but a set of changing relations, what else is it but appearance?

VI. Another Common-sense Difficulty and its Removal (157E–160D).—The theory, however, is not yet complete and a ruder shock than ever is in store for common sense. Nothing seems more certain than that in dreams, disease, insanity, and the illusions of sense

we have false perceptions and that, therefore, so far from the doctrine that "everything is to each man which appears to him" being true, the exact contrary is the case. "Nothing is which appears." Can this difficulty be overcome? Theætetus thinks not. Socrates, however, points out to him that it is impossible to prove you are not dreaming when you are awake, and that dreams while they last are as real as the waking life. Consequently, if the experiences of the waking life are true, dream experiences are on precisely the same footing.

To the objection that experiences of insanity and other diseases do not last as long as those which we have in sleep, Socrates replies that length or shortness of time is no criterion of truth, and that it is impossible to demonstrate which set of experiences—those of insanity and disease or those of sanity and disease—are true, whereas the theory of motion does show that the experiences of the former are true and real so long as you have them, and that, therefore, all experience is incurably relative to the subject. The bitterness of wine in sickness is just as real as the sweetness of wine to the healthy man. And, as a matter of fact, neither set of experiences can claim to be truer, because all experiences are on the same level. All we can say is that they are different and no invidious comparisons are justified. Every sensation is bound up with its own object of sensation, and neither can exist apart from the other. It has been shown that one potentiality of motion is wholly different from the potentiality of another; and also that a percipient is never like himself (154A). Consequently, if anything becomes unlike itself, it becomes different, and, furthermore, a different result is produced when one potentiality of motion, active or passive, unites with a different partner. It follows accordingly that Socrates asleep or ill is totally unlike and different from Socrates awake and well, and, therefore, whichever of the infinite active elements takes hold of the passive element, viz. Socrates, will produce a different "pair of twins" in each case, according as he is well or ill, *i.e.* sweetness and the perception of it in the one case, and bitterness and the perception of it in the other; while the tongue becomes perceptive of the sweetness or bitterness and the wine becomes sweet or bitter accordingly.

The reason is, of course, that the active element never gets hold of the same man, and the experience is unique, for neither of the elements, active or passive, or their union or its result, can ever be repeated. The percipient subject, with whom the theory started, is really nothing but a single sensation and the object is nothing but what appears at the moment of sensation. If I am nothing more than a single unique sensation and the object is nothing more than what the perception is of at the moment of sensation, the perception is clearly of what *is* (or appears) to it and to it only. And in the words of Protagoras: "I am judge of the things that are, that they

are, and of the things that are not, that they are not." How, then, if I am not deceived and never make a mistake about what is or becomes, can I fail to know what I perceive?

So the fine theory of Theætetus, that knowledge is perception, based on the doctrines of Protagoras and Heraclitus, has been shown to be correct, though at the cost, it is to be remarked, of translating "man is the measure of all things" into "a fleeting sensation is the measure of a fleeting object of sensation."

It is now time to examine it and find out whether it is worth rearing, as a truth, or only fit to be thrown away, as a wind-egg or lie.

At this point Theodorus, the expert mathematician, not used to dialectic but accustomed to methods of proof, asks Socrates whether it is right or wrong. Socrates, the dialectician, points out that he is not a bag full of arguments and it is not his business to decide whether one is right and another wrong. He is not responsible for the theory, and he only knows enough to be able to examine it. The theory must, of course, prove or refute itself. Besides, how can Socrates say dogmatically whether the theory, which repudiates the very distinction between truth and falsity, by making all opinions true, is itself true or false? The only thing to do is so to conduct the argument as to demonstrate at one and the same time the falsity of the theory and by consequence the existence and possibility of falsity in general and thereby establish the difference between truth and error.

(*To be continued.*)

RENOUVIER: THE MAN AND HIS WORK (I)

PROFESSOR J. ALEXANDER GUNN

> ". . . a thinker who, much neglected, is doing much to renovate the spiritual life of his native France to-day; I mean Charles Renouvier, whose writings among us ought to be better known than they are."
>
> WILLIAM JAMES (in 1881).

IN Charles Renouvier we have one of the lone, stern, and indefatigable workers in philosophy in the nineteenth century. His powerful mind, moral earnestness, and intellectual vigour command respect and attention and place him high in the ranks of the philosophical thinkers of his century. He differed profoundly from his English contemporary Spencer and his German contemporary Lotze, both of whom have received more attention than Renouvier. His long and immensely active life fell into periods which coincide with, and partly reflect, the political and intellectual fortunes of his country from the Battle of Waterloo, through the Revolution of 1830, the Second Republic of 1848, the Second Empire, the War and the Commune of 1871, into the Third Republic, with its Dreyfus struggles and its Educational and Disestablishment problems in the early years of the present century.

I. HIS LIFE

1. *From* 1815 *to the Coup d'État of* 1851 (*His Earlier Philosophy*)

On New Year's Day, 1815, Charles Bernard Renouvier was born at Montpellier, the capital of Hérault, a Mediterranean department of France. This was also the native town of Auguste Comte, who was born there seventeen years earlier and with whom Renouvier shares the honours of philosophy in France in the nineteenth century. Comte was already, in 1815, in his second year of study at the École Polytechnique in Paris, whither Renouvier was to follow him. Renouvier was a member of a well-to-do family of wine-growers, being the youngest of three children. He had one sister and one brother, Jules, who is remembered for his important contributions to French archaeology. This same Jules, as we shall see later, was destined, in 1848, to make a speech in the Chambre des Députés in defence of his brother's writings. Renouvier *père* was a highly cultured man, and himself educated Charles in the house on the

Boulevard Jeu de Paume. Both Comte and Renouvier, it is interesting to note, were reared in Catholic families. In 1825 Charles Renouvier was entered at the Collège Royal, whither Comte too had gone some ten years before. Four years later Renouvier *père* was elected for Parliament and took his son to Paris with him, enrolling him at the age of fourteen as a "pensionnaire" at the Collège Rollin, a school where, long afterwards, Bergson was on the staff for a little time. Here Renouvier met, in class, Félix Ravaisson, who had such an influence on the young thinkers of a later generation, and who, in 1867, by his famous *Rapport*, dealt a blow at the dominance of Cousin's vague and sentimental idealism. Dominance is indeed *le mot juste*, for Cousin dictated for many years the official philosophy, and although he encouraged work in the history of philosophy, he would not countenance doctrines which were at variance with his own. This dominance of Cousin was partly responsible for the slow recognition of Renouvier's work, which, apart from Ravaisson's notice in his *Rapport*, received, unfortunately, scant attention.

When Renouvier first came to Paris, Cousin was just laying down his programme, but at the moment it did not interest Renouvier. Young and enthusiastic, his mind turned to social philosophy and, above all, to the discussion of the work of a thinker who, before his death in 1825, had attracted considerable attention in France by his social doctrines, laying, indeed, the foundations of modern socialism, Saint-Simon. Jules Renouvier also became an ardent follower of Saint-Simon, whose disciples were numerous and active. The year 1830 saw a revolution in France which ended the Bourbon restoration. The Saint-Simonist group presented a manifesto to the Chambre des Députés, and considerable interest in the doctrines of socialism was aroused. It has been estimated that Paris contained 40,000 Saint-Simonists. They might have achieved some of their objectives but for difficulties among their leaders, Bazard and the curious character Enfantin, who, in effect, split the party by his views on marriage and sex problems. The students of the Collège Rollin were much interested in Saint-Simonism. Pierre Leroux, a printer and publisher of Paris, joined the Saint-Simonist group in 1831 and gave the group an outlet for its ideas in his paper *Le Globe*. Speaking of these years in later life, Renouvier confessed that he was much occupied with the study of Saint-Simon and read *Le Globe* surreptitiously during class and took only a half-hearted interest in philosophy.[1] Although in later life he lost many of the socialist hopes of his youth, the Saint-Simon spirit remained with him and he retained a keen interest in social ethics, as is apparent from his excellent *Science de la Morale* and the volumes of his *Philosophie analytique de l'Histoire.*

The following year an outbreak of cholera in Paris led to the

[1] *La Critique philosophique*, vol. xii, p. 275.

temporary closure of the Collège Rollin. Renouvier, who had set his face towards the great "École Polytechnique," entered the Collège Charlemagne in order to prepare for entrance to the "École," where Comte, his fellow-townsman, had just been appointed "Répétiteur" of Higher Mathematics. Renouvier, during his two years of preparation for the entrance examination to this great scientific and mathematical institution, was much impressed by the mathematical philosophy of Comte, published in his *Cours de Philosophie positive* three years previously. He always acknowledged his debt to Comte in this connection, in spite of his later criticisms of that thinker's system.

In July of 1834 Renouvier took the entrance examination and was successful in being among those admitted. It appears that 154 students were selected on this occasion, Charles Renouvier being numbered 153 on the list. At the École he appears to have become disillusioned regarding his Utopian dreams and to have abandoned Saint-Simonism as one abandons "calf-love." Other interests had come. He was now working under Comte and devoting himself industriously to mathematics. An event which had no little influence upon the future development of his thought was his meeting and friendship with Jules Lequier.[1]

On the conclusion of his course in 1836, Renouvier was offered a position in the "Marine," but declined this career. For the next few years he appears to have been unsettled and, having no financial worries, was evidently not in a hurry to settle down. He appears to have lived in Montmartre and occasionally to have attended the lectures at the Sorbonne by Damiron. We are told that in 1838 "il était épuisé physiquement et moralement par sa vie mondaine."

In 1839 the Académie offered a prize for a work on "Cartesianism." Renouvier at last found something definite to do and he tackled the job vigorously, in a manner hardly consistent with the diagnosis just cited. He applied himself to a thorough study of Descartes, Malebranche, Spinoza, and Leibnitz. By June 29, 1840, his manuscript was in the hands of the Académie, and although it failed to get the prize, it was accorded *mention honorable*. In 1842 this ripened into his first published work, *Manuel de Philosophie moderne*. He was now twenty-seven years of age and determined to devote

[1] As I pointed out some years ago in my *Modern French Philosophy* (1922), Lequier had a profound influence on Renouvier's work, especially in the Second Essay (Psychology) and its treatment of the problem of freedom. Lequier was born in 1814 and entered the École Polytechnique in 1834, leaving two years later for a military staff appointment, which he abandoned. He died in 1862, after destroying much of his writings and enduring much mental suffering and madness. Three years after his death was published the volume, *La Recherche d'une première Vérité, fragments posthumes de Jules Lequier*. This was reissued in 1924 and reviewed in *Mind*.

himself to philosophy. Two years later he produced a complementary work in two volumes, *Manuel de Philosophie ancienne*. He then contributed several articles to the *Encyclopédie nouvelle*, organized by Pierre Leroux and Jean Reynaud. All his writings at this time show that his mind was going through a Hegelian phase, from which, however, he was to depart.

The year 1848 saw in France the second attempt to establish a republic. Renouvier's sympathies with socialism obtained a new lease of life and he was closely bound up with the destinies of the Provisional Government, which lasted from February 24, 1848, to May 4th of the same year. The difficulties which, from the outset, beset the Republic were mainly due to division within the ranks of the avowed Republicans with regard to questions of socialism or communism. Many who were ardent Republicans desired a conservative government, others affirmed that Republicanism, Democracy, and Socialism involve each other and must go hand in hand. Struggles occurred regarding the adoption of the Red Flag or the Tricolour. Louis Blanc had published his book, *Organisation du Travail*, and mobs of unemployed and others had taken up the title as a slogan.

In the midst of these discussions Renouvier was appointed Secretary to a Commission on Education. The Minister of Education asked one day for a book suitable for placing in the hands of schoolmasters who had to give lessons on Citizenship or Civics. Renouvier supplied a manuscript which was published under the title, *Manuel républicain de l'Homme et du Citoyen*. Shortly afterwards, in a debate nominally on teachers' salaries, Renouvier's book was vigorously attacked in the Chamber by Bonjean, the *député* of La Drôme.[1] Jules Renouvier, who was also a *député*, defended his brother's book. The matter became a distinct challenge to the Minister of Education, Carnot, and to the ministry as a whole. The discussion culminated, after long quotations from Renouvier's book, in a vote of no confidence, which was carried by 314 votes to 303. The Minister resigned that evening, and on the following morning (July 6, 1848) Charles Renouvier and his friend Reynaud resigned their respective posts as secretary and president of the Commission. Renouvier was disgusted with politics! He had one minor consolation. The book had such publicity that a second edition was rapidly called for.

He was destined to be more disappointed and disgusted in the next three years owing to the machinations of Louis Bonaparte, who in December, 1848, was elected President of the Republic. Against him and his policy Renouvier penned trenchant articles in *Liberté de penser*. He also published, in collaboration with socialist friends,

[1] Bonjean, after holding various offices under the Empire, was shot in 1871 as a hostage by the Communists.

Gouvernement direct et organisation communale et centrale de la République, setting forth a scheme for the decentralization of the government of France, making the canton or commune a centre of effective local government.

He also began, in the *Revue philosophique*, instalments of a philosophical novel entitled *Uchronie*, but this was never completed (in this form). Like a bolt from the blue came the *coup d'état* of Napoleon III on December 2, 1851, and the fall of the Republic in favour of Monarchy, Imperialism, and reaction. This event, together with the exile of many of France's best men (*e.g.* Victor Hugo) and the persecution of others (Quinet and Michelet lost their chairs), so discouraged Renouvier that in bitter disappointment and disgust he abandoned his immediate practical interest in politics and turned his intellect with its tremendous energy to the study of philosophy.

2. *Under the Second Empire*, 1851–1871. *The Period of the "Essais de Critique générale" and the "Ethics"*

He went into "retreat," for he could not work in Paris. He was now thirty-six, and was beginning to formulate his own philosophy on lines nearer to Kant than to Hegel. Up to this time the two *Manuels* and the interesting article "Philosophie" in the *Encyclopédie nouvelle* comprised practically all his philosophical work. The article marked his break with Hegelianism in favour of the work of Kant. He established himself in the Forest of Fontainebleau, in an isolated house "with a garden and a cow" in the centre of the great forest. Here he remained working vigorously for ten years until his *magnum opus*, the famous *Essais de Critique générale*, was almost completed (in its first form). He paid occasional visits to Paris to attend church and the theatre, and twice a year visited Montpellier to see his father and attend to matters of business affecting the Renouvier estates, the vineyards at Loupian.

The *Essais de Critique générale* constitute Renouvier's title to fame, and it is unfortunate that some historians, if they have not omitted his work altogether, have confined their attention to his later books.[1] The chief features and importance of Renouvier's neo-critical philosophy will be examined in the second part of this article, to which we shall come upon completing a biographical sketch of a life exceptionally vigorous and productive in the philosophical field.

After two years in his "hermitage," Renouvier issued the first volume of his monumental work. This was a large volume of more

[1] This applies to Höffding, who does not deal with Renouvier at all in his *History of Modern Philosophy*. Setting out to remedy certain omissions by his volume *Modern Philosophers*, Höffding does indeed give a section to Renouvier, but does not examine the *Essais de Critique générale*.

than six hundred pages entitled *Premier Essai, Analyse générale de la Connaissance: Bornes de la connaissance.* This volume was devoted to Logic, Theory of Knowledge, and allied topics. Its reception was very discouraging; it was practically ignored.[1] From 1853 to 1859 Renouvier was devoting his attention to the problems of Freedom and Morality, passing, one might say, from his "Critique of Pure Reason" to his "Critique of Practical Reason." At this time he contributed articles on these questions to the *Revue philosophique et religieuse.*

The second essay appeared in 1859, another very large volume, *Deuxième Essai: L'Homme, la Raison, la Passion, la Liberté, la Certitude, la Probabilité morale.*

After a sojourn of ten years in the forest, Renouvier returned to Paris. Three years later he published two further volumes constituting the third and fourth essay respectively, and completing the material of the essays for the time being. The third was on *Les Principes de la Nature,* while the fourth bore the title *Introduction à la Philosophie analytique de l'Histoire.*

These writings, which in their original form occupied the decade 1854–1864,[2] and *in their revision* covered almost half a century (1854–1897), are, with his book on *Ethics,* published separately, Renouvier's main contributions to philosophy.[3]

The year 1867 saw the death of Cousin, the great eclectic idealist, who by his control of the Sorbonne kept other types of philosophy, especially that of Renouvier, from both academic and public recognition. Renouvier had little to encourage him in the reception of his books, which were only read by a very few friends. In this same year, however, his old schoolfellow, Ravaisson, issued his celebrated *Rapport sur la Philosophie en France au XIX^e Siècle,* and in it called the attention of his countrymen to the important and monumental *Essais* of Renouvier.

Also in 1867, Renouvier, in an endeavour to bring home his philosophy to his countrymen, undertook the publication of a monthly periodical in conjunction with his scholarly friend, François Pillon. This was *L'Année philosophique.* It came to an untimely end owing to the outbreak of the war between France and Germany, but was re-established by Pillon in 1890. It was this periodical which drew to Renouvier the attention and friendship of William James. The

[1] Renouvier held no academic position, and his views were unacceptable, if not unintelligible, to those who professed the "official" sentimental idealism of Cousin.

[2] Lotze's *Mikrokosmos* covered the same period, 1854–1864. Comte concluded his *Philosophie positive* in 1854.

[3] Present editions of the *Essais* total ten volumes (*Logic,* 2; *Psychology,* 2; *Principles of Nature,* 1; *Introduction to Philosophy of History,* 1; *Philosophy of History,* 4).

American philosopher's high opinion of Renouvier is borne out by several letters and by dedications and references in his writings.[1]

The outbreak of war not only stopped the publication of *L'Année philosophique*, but diverted attention from one of Renouvier's greatest books, his *Science de la Morale*, issued in two volumes in 1869, in some respects his best book, and, as he tells us, his "favourite" among the many children of his mind.

3. *Under the Third Republic*, 1871–1903. *Later Philosophy—"Le Personnalisme"*

The conclusion of the disastrous war in 1871 resulted in the establishment of a Republic for the third time in France, a Republic which, through many trying vicissitudes, has endured to our own day. With the signing of peace and the end of the bloody struggles of the Commune, Renouvier, now in his fifty-seventh year, while not seeking to return to active political or public life, but being as vigorous as ever, felt encouraged to undertake the ambitious scheme of the publication of a *weekly* paper, not only philosophical in character, but political, literary, and religious. He ardently wished to address his fellow countrymen at a time when they were intellectually and morally bewildered by the events of that year which Hugo styled "L'Année terrible," the year of Sedan and the Commune. Renouvier felt that he had something to offer intellectually and morally constructive, and he urged the importance (and, if possible, the acceptance) of his own political and religious convictions arising out of his philosophy. He may indeed have hoped that his *néo-criticisme* might become the accepted philosophy of the new Republic, which had, of course, restored in the *lycées* the philosophy-classes suppressed under Napoleon III. To this end Renouvier founded, in 1872, the weekly review, *La Critique philosophique*.

The announcement of its publication read, "*La Critique philosophique* is the organ of the great doctrine born from the spirit of the eighteenth century, and of the French Revolution, whose principles were laid down by Kant, and is now set forth to-day free from the contradictions and errors which clouded it at the beginning and have hindered its progress, revived by a fresh analysis of the laws of thought and the modes of knowledge, thus giving to it what it did not receive from Kant, a character truly positive, a systematic unity, harmonious and complete."

This paper, vigorous and courageous, like its producer, appeared

[1] The letters of James are given in *The Letters of William James*. Renouvier's letters to James are published in the *Revue de Métaphysique et de Morale* (two numbers of 1929, January and April).

weekly from its commencement in 1872 until 1884, then from 1885 until its unfortunate cessation in 1889 it appeared only monthly.

Apart from French contributors and the joint editors, William James sent various articles. In the year in which *La Critique* appeared, James wrote his first letter to Renouvier referring to *La Science de la Morale* (which he had been reading) and making inquiries about Lequier's work. Eight years later the two men, Renouvier and James, met at Avignon, and James held both Renouvier and Pillon in great esteem. As instances of this regard, it may be pointed out that in 1881 James made public reference to Renouvier and his work in *The Will to Believe*. Later, James dedicated his *Principles of Psychology* "to my dear friend, François Pillon, as a token of affection and an acknowledgment of what I owe to *La Critique philosophique*." Further, James' book, *Some Problems of Philosophy*, contains a dedication to Renouvier as one of the greatest of philosophic characters. "But for the decisive impression made on me in the seventies by his masterly advocacy of pluralism," says the American thinker, "I might never have got free from the monistic superstition under which I had grown up. The present volume, in short, might never have been written. This is why, feeling endlessly thankful as I do, I dedicate this text-book to the great Renouvier's memory." In addition to corresponding with James, Renouvier wrote interesting letters to Secrétan, the Swiss philosopher.[1] James, after reading Secrétan's *Note on Renouvier*, remarked of Renouvier's philosophy, "It seems to me the classical and consistent expression of *one* of the great attitudes to the Universe, that of insisting on logically intelligible formulas. If one goes beyond one must abandon the hope of formulas altogether." These references to correspondence give an interesting impression of the work and influence of Renouvier and his colleague at this period.

Renouvier's enthusiasm for his periodical did not, however, abate his ardour for more continuous, profound, and lasting work. On the contrary, he now turned to one of the great tasks of his life. His *magnum opus*, *Les Essais de Critique générale*, existed in four volumes, issued during the ten years 1854–1864. He now resolved to revise, augment, and, indeed, to re-write these volumes and to add a fifth essay. This task of revision and extension occupied him for over

[1] These letters have been published in a separate volume. Secrétan was the same age as Renouvier. As a thinker he was essentially religious and mystic, and this is shown in the published correspondence by his preference for 'love' as an ethical ideal, while Renouvier used 'justice.' Secrétan's training had been largely German. He had followed Schelling's lectures at Munich. While Renouvier's other friend, Lequier, was a Catholic, Secrétan was a strong Protestant. Secrétan died in 1895. He did much to make Renouvier's work known to Swiss Protestant clergy, several of whom have written articles and monographs on his religious thought.

twenty-five years (the original volumes had taken him thirteen years!). In the revision he simplified his titles, and it is in this approved form we know them to-day. As issued from 1875–1897, the *Essais* reached thirteen volumes. The revised editions of the first and second essays were ready by 1875 and issued from the press of his own paper under the title *Traité de Logique générale et formelle* (in three volumes) and *Traité de Psychologie rationnelle d'après les Principes du Criticisme* (also extended to three volumes).

In the following year he issued the very curious work which he had begun as a serial just before the *coup d'état*, entitled *Uchronie*, dealing with the development of European civilization from A.D. 100 to 800 as it was and as it *might* have been! The purpose of this work was the denunciation of the notion of fatalism in history. Meanwhile Renouvier and Pillon (in their spare time, as it were!) published a French translation of Hume's *Treatise on Human Nature*.

Renouvier's abounding energy and enthusiasm for his weekly *Critique philosophique* is, however, the main feature of this period of his life, although we cannot neglect the important extensions of his *Essais*. (These new discussions are given in the 1912 edition of Messrs. Armand Colin in smaller type than the matter carried over from the first edition.) Renouvier still did not feel that he was doing all that he might, even in *La Critique philosophique*. His political policy as advocated in that paper may be summed up in a sentence from the last year of issue, where we find Renouvier remarking that it had been his aim throughout to uphold strictly republican principles and to fight all that savoured of Caesar or Imperialism. His religious attitude was no less clearly defined than his political attitude. Renouvier showed very marked hostility to the Roman Catholic Church, and to the clerical party and its power in France. *La Critique philosophique* was aggressively Protestant. He urged all Catholic readers of his paper, indeed, all true republicans, to quit the Catholic for the Protestant Church. With this object in view he added, in 1878, a supplement to his *Critique philosophique*, which he entitled *La Critique religieuse*, a quarterly intended for propaganda purposes. "Criticism," he had said, "is in philosophy what protestantism is in religion." [1] Certitude is, he held, the fruit of intelligence, heart, and will, consequently it can never come about by the coercion of authority. He believed that the verdict of history is against authority and that authority in religious matters will be unable to maintain itself in the future. Hence we see that Renouvier's keen interest in theology, and especially in the theological implications of much philosophical thought, was not merely due to general speculative impulses but to a practical wish to initiate a rational restatement of religious conceptions. In effect he supported and reiterated Gam-

[1] *La Critique philosophique*, 1873, pp. 145–146.

betta's warning to the young Republic, "Le Cléricalisme—voilà l'ennemi." Renouvier knew how intimately the religious question is bound up with the educational question. Hence he was a keen supporter of the secular schools (*Écoles laïques*), and in 1879 he issued a little book on ethics for these institutions, *Petit Traité de Morale à l'Usage des Écoles primaires laïques*, of which a second enlarged edition was called for in 1882, when Ferry achieved his free secular and compulsory education scheme for the nation. Renouvier's energetic campaign did not, however, meet with much success along the line he desired, and he complained of receiving insufficient support from quarters where he might well have expected it. Yet there is no doubt that his strong anti-clericalism hurried on the day of compulsory education and of disestablishment in France, the end of the "Concordat," and the official severance of Church and State, an event which he did not live to see, as it was only accomplished by Briand and Combès in 1905. Becoming somewhat discouraged in this direction, Renouvier stopped the publication of the religious supplement in 1885 and also turned *La Critique philosophique* into a monthly instead of a weekly journal.

Some articles which had appeared in *La Critique religieuse* some years previously were issued in book form, making two large volumes, *Esquisse d'une Classification systématique des Doctrines philosophiques*. The second of these contains a valuable piece of autobiography, a philosophical confession of faith, "Comment je suis arrivé à cette conclusion," a reprint of articles already printed in the *Critique* of 1877, as "Une Évolution Personnelle."

Meanwhile Renouvier was keeping up all his other interests, keeping abreast of all contemporary thought in Europe and America, corresponding with Lotze in Germany, with Secrétan in Switzerland, and James in America. In addition, his vast work of revising the *Essais de Critique générale* continued, and the year 1892 saw the appearance of the revised edition of the third essay, dealing with the *Principles of Nature* (in two volumes).

With vigour unabated, although now seventy-eight, Renouvier displayed his power in the field of literary criticism by an excellent volume on *Victor Hugo, le Poète*.

The fourth essay, the *Introduction à la Philosophie analytique de l'Histoire*, was re-issued in 1896 with eight additional chapters. This was followed in the same year by half of the enormous fifth essay, which was an addition to the work as it stood originally in 1854–1864. This fifth essay was the *Philosophie analytique de l'Histoire* itself. Two volumes appeared in 1896, and by the issue of two further volumes in 1897 the great series of *Essais de Critique générale* was complete.[1] For reasons which are not apparent, Renouvier did not

[1] This essay is an enormous work and contains an extremely fine account of social philosophy in the nineteenth century.

regard his *Science de la Morale* as a sixth essay, as an integral part of the whole series, but it may quite well be regarded in this way, completing a series covering Logic, Psychology, Principles of Science, of Sociology, and of Ethics.

Renouvier's next work (he was unmistakably a worker) was a volume issued with the assistance of his friend, Louis Prat, which marks a new phase of his thought differing in several respects from the *Essais*. While he owed much to both Hume and Kant, Renouvier now seems to have turned, in part at least, from neo-Kantian to a neo-Leibnitzian philosophy. The title of this work, *La nouvelle Monadologie*, naturally recalls the philosophy of Leibnitz. Its publication in 1899 marked a new period in the philosophy of this thinker, now an old man of eighty-four, still writing and developing a fundamentally new phase of his thought.

It is with pleasure, therefore, that we can call attention to the two facts which follow. *La nouvelle Monadologie* was *couronné* by the Académie des Sciences morales et politiques, obtaining the Estrade-Delcros Prize. Further, in the same year, Renouvier, so long deprived of any official or academic recognition by his country, was admitted a member of the Institute by election to the Académie des Sciences morales et politiques at the age of eighty-five. Another academic honour came to him in 1900, when his second volume on Hugo, *Victor Hugo, le Philosophe*, was also *couronné*.

The opening of the present century shows us Charles Renouvier as an old man celebrating his eighty-sixth birthday with further plans for new books. His energy and keenness were unaffected by old age, for in the following year he published the substantial volume entitled *Les Dilemmes de la Métaphysique pure*, together with its weighty sequel *Histoire et Solution des Problèmes métaphysiques*. But the most important book of his neo-Leibnitzian period was still to come, a double-volume of a curious kind entitled *Le Personnalisme*, with which was bound an *Étude sur la Perception et sur la Force*. He was now eighty-eight, but he had lost none of his old interests either in philosophy or in politics. The educational question and the disestablishment problem were foremost in the minds of his countrymen, and so his last published article was devoted to *Liberté d'Enseignement et Liberté des Congrégations*, published in the *Bulletin* of "L'Union pour Action morale" (1902). *Le Personnalisme* (1903) was his last published work in philosophy, but he remained active to the last, concluding a large critical work on the doctrines of his master, Kant, from whom he differs so frequently, but to whom he owed so much, especially in what must always be regarded as his main work, *Les Essais de Critique générale*.

Death overtook him (at Prades, in the "Pyrénées-Orientales," in September, 1903) in harness, for his last hours were spent in dictating

to his devoted friend and disciple, Louis Prat, a résumé of his philosophical beliefs. This was published after his death as *Derniers Entretiens*, and at intervals appeared his other posthumous works, a translation of Berkeley, his *Pensées*, his correspondence with Secrétan, and, of course, his *Doctrine de Kant.*

Well might he say, in surveying his long life, "Ceci est à honneur et je le dis avec quelque fierté, j'ai beaucoup travaillé." His work was great and noble, being animated by a love and passion for truth in intellectual matters and justice in the realm of social affairs. Like Kant, Renouvier had the combination of keen intellectual and deep moral earnestness. There is always a keen logical temper in his work, especially evident in the first two *Essais*. There is always, too, the disciplined enthusiasm of one who in his younger days read the Saint-Simonist philosophy under his desk at school. On the other hand, one must add this. The reader finds his volumes somewhat heavy both in form and in style. The present writer has frequently felt that Renouvier's work is a translation from some other language than French.[1] Contemporary French critics found his style heavy. There is little of the grace of the pages of Bergson. But there are other compensations in the acute analysis, argument, and power of reasoning. Then the quantity of his writing is so enormous that it has deterred many from turning to his books, none of which has been translated into English. It is apparent that teaching would have helped Renouvier to achieve a greater clarity or at least a less voluminous style. He was unacquainted with the truth mentioned by that master of French style, Anatole France, who, in defending the short story rather than the lengthy novel, remarked, "Brévité est la première politesse." Of course, in philosophy, arguments cannot well be abbreviated without losing cogency, but if Renouvier had not written so many books he might have had more readers, and certainly if he had been not a man of leisure but a University teacher, he would not have written so many or made them so long.

Well did James say when he heard of his death, "Well, what a life!" It was a singular life in its length and its enormous activity, and we agree with James when he remarked, so far back as 1881, "his writings ought to be better known than they are." Renouvier, with all his defects, was not only a great Frenchman, but one of the great minds of philosophy, which, in its universal quest of truth, transcends alike the national environment and the century in which the philosopher finds himself.

[1] I have since learned that his examiners in 1840 considered his manuscript to be from the hand of "*un étranger.*"

(To be continued.)

THE NEW COSMOLOGY IN ITS HISTORICAL ASPECT: PLATO, NEWTON, WHITEHEAD

PROFESSOR T. M. FORSYTH

RECENT developments both in science and philosophy are tending to converge upon an outlook on things that constitutes or at least foreshadows a great new synthesis. The advances made more especially in astronomical and physical knowledge—the one concerning the indefinitely vast and the other the indefinitely minute—and the similarities disclosed in the two spheres, recalling Pascal's insistent relating of the two infinites (the infinitely great and the infinitely small), and also Bacon's contention that such similarities are not mere analogies but "the same footsteps of nature treading or printing upon several subjects or matters,"[1] have both widened and unified our conceptions of reality. Along with this has gone the influence alike on philosophy and on the sciences generally of the development of mathematical and biological ideas. Under the combined influence, especially, of Bergson and Einstein a restatement of fundamental principles is proceeding apace.

The most penetrative as well as the most systematic expression of the new standpoint is found in the works of Whitehead.[2] In his latest work, entitled *Process and Reality*, Whitehead refers to Plato's *Timæus* and the *Scholium* to the introductory definitions in Newton's *Principia Mathematica* as being "the two statements of cosmological theory which have had the chief influence on Western thought." "To the modern reader," he says, "the *Timæus*, considered as a statement of scientific details, is in comparison with the *Scholium* simply foolish. But what it lacks in superficial detail, it makes up for by its philosophic depth. If it be read as an allegory, it conveys profound truth; whereas the *Scholium* is an immensely able statement of details which, although abstract and inadequate as a philosophy, can within certain limits be thoroughly trusted for the deduction of truths at the same level of abstraction as itself. The penalty of its philosophical deficiency is that the *Scholium* conveys no hint of the limits of its own application. . . . It is the office of metaphysics to determine the limits of the application of such abstract notions."[3]

The purpose of the present article is, following this suggestion of

[1] *Advancement of Learning*, Book II, chap. v, § 3.

[2] Cf. especially *Principles of Natural Knowledge* (1919); *Concept of Nature* (1920); *Process and Reality* (1929).

[3] *Op. cit.*, p. 129.

Whitehead's, to state in a brief and compact way (without any comments) the main features of these two and the new cosmology, more especially from the point of view of the general development of philosophical and scientific thought.

Plato's Cosmological Doctrine

Much of the statement in Plato's *Timæus*[1] is mythical in form, much of it is obscure even if highly suggestive, and in its details it has been largely superseded by later knowledge. But the conception of the fundamental nature of the universe or cosmos which Plato entertains may be expressed, in its essentials, as follows.

Being or reality is eternal and changeless, and is apprehended only by thought. But it manifests or expresses itself in a process of becoming, which has no actual beginning or ending, but is the counterpart of eternal being; and this changing process is apprehended by the senses and by the judgments based on sense-impression. Thus the intelligible or supersensible reality always is and has no becoming; while what is sensible is always in a process of becoming and perishing and never really is. But all process or change implies a cause; and the ultimate cause—or rather ground which is reason as well as cause—of the sensible world or process of becoming can be nothing but the intelligible reality itself. The eternal reality creates or produces the sensible universe after the pattern or likeness of its own nature. Hence it is that the creature or created existence is an organic whole or cosmos—that there is only one world or universe which is all-comprehensive and all-inclusive, and that it exhibits order and an intelligible nature which mind can apprehend.[2]

The sensible universe, as visible, tangible, etc., constitutes what is termed body or matter, which is the expression or vehicle of mind or soul; so that the universe is at once material and spiritual in its nature. (The sensible *is* the intelligible in bodily, *i.e.* visible and tangible, form.) Further, although the sensible universe is not truly infinite and eternal (terms that properly belong only to the intelligible reality), yet it partakes of or imitates eternity by means of the

[1] The cosmology given in the *Timæus* does not stand alone, for aspects of it are found in such Dialogues as the *Phædrus*, *Philebus*, and *Laws;* but the exposition of the *Timæus* is the fullest as well as having been the most influential. It is contended with much likelihood of truth (by A. E. Taylor in his *Commentary* on the Dialogue) that all or most of the statement is Pythagorean doctrine; and Jowett remarks that "many, if not all, the elements of the Pre-Socratic philosophy are included in the *Timæus*." But by taking different Dialogues together—as the following account of it does—we can see what Plato's fundamental standpoint is, quite apart from the question how far this agrees or disagrees with the tenets of some of the other Greek thinkers. Its relation to the system of Democritus is referred to below.

[2] *Timæus*, 27*d*–31*b*.

"moving image of eternity" that is called time;[1] in virtue of which particular things perpetually come into and pass out of existence. And the forms which they take are modifications or determinations of that permanent and universal receptacle or matrix of all that changes and becomes, which we call space.[2]

Thus the way in which we must represent to ourselves the origin of the universe—which is in reality a timeless fact—is to say that out of the void or chaos in which there is nothing with any determinate character or form order is evolved through the formless, indeterminate matter or stuff of space receiving the impress of ideas or forms comprised in the eternal nature, which are the patterns according to which all things are formed.[3]

The Rôle of Necessity or Intractability of Matter

On the doctrine which Plato maintains, that soul is the cause or principle of motion,[4] the ultimate explanation of things must be spiritual rather than material, or teleological and not mechanical in character. There is in every existent, as emanating from the eternal reality, an element of the divine nature that is a directing and informing agency, a guiding and inspiring impulse in its process of becoming, which renders all mechanical explanations secondary and abstract. Yet secondary, *i.e.* material or mechanical causes, have their place as expressing the conditions without which no actual process occurs or determinate form of existence is realized. This is the meaning of Plato's reiterated statement that it is only "as far as possible" that the good (or the best) is realized in the universe. In other words, the materialist explanations of the cosmos, which in Plato's day were most fully and definitely presented by Leucippus and Democritus, and against which his own cosmology—as the *Laws* makes quite clear—is primarily directed, have an element of truth in them. They express the cosmic process taken in abstraction from the life or inner nature which gives movement and significance to the whole system of things—"the world without God," or nature in terms of the priority of body to soul instead of conversely. But the necessity[5] implied in the conditions that express the possibilities—at once the limitations and the opportunities—of determinate existence and are inherent in the multiplicity and particularity, the relative freedom and individuality, which are the counterparts of the unity of the cosmos, gives the appearance of a mechanical

[1] 37*d*.

[2] 49*a*.—The identity of matter with space is implied, as Windelband remarks, in Plato's identification of physical with mathematical body, *viz.* form and number.

[3] 52*d*–53*b*.

[4] *Phædrus*, 245; *Philebus*, 28–30; *Laws*, X, 891–9.

[5] This is the real meaning of the so-called intractability of matter.

causation that is the very reverse of spontaneous action in accordance with the "idea of the good." Plato expresses this by saying that "the world is a mixed creation, resulting from a combination of necessity and reason,"[1] and that it attains perfect order and harmony only in so far as necessity is ruled or persuaded by reason.[2]

Newton's Concept of Absolute Space and Time

While Plato's cosmology, especially as expressed in the *Timæus*, had the greatest influence on philosophical thought in the ancient and mediæval periods, and has retained its influence, although in lesser degree and in modified forms, during the succeeding epoch, it is the cosmology of Newton's *Principia*[3] that has mainly determined and dominated the standpoint of modern science. A long history separates the one doctrine from the other. The Ptolemaic system of the universe had been constructed and had been superseded by the Copernican. Kepler had discovered the laws of planetary motion and Galilei the laws of falling bodies. The theory of Democritus, of atoms falling in the void, had been succeeded by Descartes' vortex theory. Newton's law of universal gravitation (involving the application of the principles of mechanics to the solar system) explained and unified the laws of Galilei and Kepler, and supplanted the theory of vortices. But the chief philosophical significance of Newton's *Principia* lies in its embodying a great original synthesis, which expresses in definite form the categories and presuppositions of the new period of scientific inquiry—what is conveniently, if somewhat inadequately, distinguished as the modern in contrast with the ancient and the intervening mediæval period of human thought—and which formed the basis for the vast developments of scientific knowledge during the last two centuries. The fundamental ideas[4] involved in this synthesis are implicit rather than explicit in Newton's exposition of scientific principles and conclusions. They are contained not so much in his formal definitions, or in his statement of theorems as deductions applying the general principles of his system to a great variety of scientific problems; but in the explanatory notes

[1] Adam's rendering of the passage.

[2] *Timæus*, 47*e*–8*a*.—Cf.: "There is always the problem in cosmic evolution of inducing individuals to adjust themselves to a higher pattern—of bringing the electron into the atomic field, the atom into the molecular field, molecules into the structural field of molar body, inorganic matter into the field of living matter, living matter into a more and more complex hierarchy of fields, man into the field of more adequate social patterns, and social patterns into line with the ultimate cosmic patterns."—J. E. Boodin, "Cosmology in Plato's Thought," in *Mind*, January 1930, p. 77.

[3] *Philosophiæ Naturalis Principia Mathematica* (1687).

[4] These are in great part common to Galilei, Descartes, and Locke along with Newton.

or *scholia* that are appended to them. Of these *scholia* the most important philosophically is that already referred to, in which he discusses the nature of time and space.

On the one hand, therefore, Newton's work consisted in definitely replacing vague and hypothetical interpretations of nature by means of the categories of substance and quality, matter and form, and the like, by scientific description and explanation in terms of precisely defined concepts (mass, velocity, etc.), and the expression of results in exact formulas. While ascribing all movement (or rather change of movement) to the force of attraction or gravitation, Newton offered no explanation of gravitation in the sense of a cause of the power or properties concerned, and the *Principia* might so far be regarded as free from all metaphysical speculation of any kind. But, on the other hand, the underlying ideas of his scientific synthesis constitute an implicit metaphysics, a cosmological system with a definite character and significance. The fundamental point in this system is the conception of absolute space and time, according to which the times and spaces of our immediate or actual experience, or of sensible things or objects, are apparent rather than real—valid and useful in everyday life, but not finally true. Now it may not be impossible to re-interpret the doctrine of absolute space and time, and to show their significance for concrete experience. In Newton's own view it had a definite religious implication. As Höffding puts it, "Space is for Newton the organ by means of which God works as omnipresent in the world, and, at the same time, immediately perceives the conditions of things."[1] But its immediate application was different.

Further, although the conception of bodies, or particles of matter, acting upon one another at a distance by an unknown force gave verifiable results in the domain of astronomy and physics, Newton himself inclined to the hypothesis of an all-pervading ether and regarded some form of impact as probably a truer expression than mere attraction for the method of working of the force called gravitation. But the full development, and in the end the supersession, of this hypothesis had to await the advancement of the sciences and the direction of philosophic thought to the implications of further discoveries and changing concepts. Meanwhile the view of space and time as extrinsic and indifferent media became the underlying cosmological foundation of the mechanical conception of the universe which held sway during the two succeeding centuries.

The Mechanical Theory of the Universe

The essence of this theory is the attempt to explain all phenomena

[1] *History of Modern Philosophy*, vol. i, p. 411.

in terms of the interaction of material particles, operating in a space that is independent of the nature of the bodies occupying it and a time that is indifferent to the events occurring in it. This mode of explanation of everything became the ideal of science, and under its influence enormous advances have been made in human knowledge in all spheres of nature and experience. No doubt the simpler and more uniform the kind of phenomena investigated, the more complete did their explication by means of this principle seem to be. But no line could be drawn between what was and what was not susceptible of interpretation, at least to some extent, in these terms. It was found that life as well as matter, mind as well as life, thought as well as sentience, conduct as well as knowledge could be shown to be resolvable, from one point of view, into fundamental processes to which mechanical categories are in greater or less degree applicable. And this point of view and method of treatment were taken to express the only intelligible and competent attitude that could be adopted in seeking to understand the facts both of nature and of human life.[1]

The Organic Theory

But the mechanistic hypothesis has proved inadequate. Starting from the development of electromagnetic theory with its concept of the field as more fundamental than the material bodies in which alone effects become perceptible, and proceeding through the study of the behaviour of organisms, science has left behind both the idea of inert matter and of space as merely the arena of changes in bodies whose qualities or properties are quite different from its own. The tendency of present-day science is to regard the entire universe as consisting of organisms of greater or less degrees of complexity—indeed the totality of nature as one living organic whole—and to explain mechanism in terms of organism rather than conversely. Along with this the conception of an ether stuff as the underlying reality and the medium of reciprocal influence between bodies or organisms has also been given up, and the nature of things is expressed as consisting essentially in process, or as having the character of events or acts and not any stuff or substance. Time, no less than space, has come to be regarded as an intrinsic factor in the nature of any real entity. Space and time together, forming a single continuum with diverse aspects, constitute the most fundamental and most general character of things or events. Any persisting or developing

[1] I have treated the subject of this and the immediately following paragraph more fully in two papers already published, namely "Some Aspects of the Approach of Philosophy and Science" and the "Significance of Holism" in the *South African Journal of Science*, vols. xxv and xxvi respectively. Hence the brevity of the statement here.

entity may be described as pursuing a determinate path or route in this space-time continuum. But an actual concrete time or duration can only be characterized as a certain definite process of developing experience, and an actual space is the real world as relating to the experiences of such a being in any given phase of its development. Hence, "instead of saying that something exists in space and time, we should rather say that it exists as a certain extensity with a certain durance or continuance."[1] This is the general basis of the new cosmology, now in process of being worked out, of which Whitehead's statement in his latest work is the most comprehensive expression.

Reality as Creative Experience

Whitehead calls his philosophy the philosophy of organism (or organic realism), thus expressing as its fundamental principle the organic character of all reality. Every real existence or actual entity is a concrete whole of parts, or unity in difference, comprising in its constitution interrelations—though in varying degrees of direct relevance—with all other entities in the universe. Its nature consists essentially in a process of becoming or self-realization, which is an act or acts of experience.[2] And what it is on its subjective side is just what the universe, as a common or objective world, is for it, including its own reactions on other things.[3] Each such actual entity or existent arises as a new creature, by a self-creative act, in a self-creating world, on the basis of whatever facts or elements of the world are specially relevant to its particular individual nature. There is thus permanence as well as change, repetition or recurrence along with novelty. For the modes of being or forms of definiteness that characterize particular things or actualities are enduring potentialities—"eternal objects" Whitehead calls them—by participation in which individual beings are constituted. Every individual thing or creature, in perishing or ceasing to be as such, endures as a possible component in the constitution of any other such entity—a potential factor in *its* life or experience. It thus acquires "objective immortality" through its appropriation by other actual entities in a ceaseless progress that

[1] From one of the papers just mentioned, which referred at length to Bergson and Alexander, and also to Whitehead's previous works.

[2] Cf. "Process is the becoming of experience," *Process and Reality*, p. 233.

[3] This is the only possible evidence of the existence of a common world. Subjective and objective, as aspects of experience, are in general identical with mental and material respectively. Experience, whether conscious or unconscious, is both mental and physical. In each actuality there are two poles of realization, the mental pole and the physical, which are related to each other as vision (implying valuation and purpose) to actual fulfilment, or as final to efficient cause.

is at once permanence and change, universal and particular, being and becoming.

Further, this conception of the nature of real being implies that the temporal world or process of becoming is the image or expression of the eternal, not as mere appearance in distinction from reality, but as the embodiment and actualization of the true nature of things. For the temporal and changing is as necessary to the permanent and eternal as the latter is to it. Each requires the other as its complement or counterpart. Without the eternal nature as the ground—the complete involvement or envisagement—of all the possibilities (or compossibilities) that become actual in the existence of the temporal world, there would be no urge towards the realization of perfection and therefore no process of becoming at all, as also no surety of progressive accomplishment. But the eternal nature would only be the potentiality of such a world apart from the fact of actualization in free, self-realizing creatures—moved by the impetus and under the lure of the eternal nature that is both beginning and end, and conditioned only by the necessity implied in the realization of a differentiated unity or harmony of being. Thus the nature of the eternal reality is made manifest in the existence or process of the temporal world, and the becoming of the world is at the same time in a sense the becoming of the eternal nature, namely its actual fulfilment in finite creatures seeking perfection and in some measure at least progressively attaining it.[1]

There is here a return to Plato's fundamental thought, with the extended outlook, the greater significance, and the fullness of knowledge that have come with the experiences and ideas of the intervening centuries, and not least through the progress of scientific inquiry and the attainment of scientific results brought about under the influence of Newton's viewpoint and ideals. It is safe to venture the prophecy that further developments of philosophy and science will tend to a fuller reconciliation, and no mere abstract opposition, of these two great historic cosmologies.

[1] Whitehead expresses this in his distinction of what he terms the "primordial" and the "consequent" nature of God. *Op. cit.*, Part V, chap. ii ("God and the World").

REAL AND APPARENT VALUE

Professor RALPH BARTON PERRY

I

One of the chief grounds of objection to the view that value is a function of interest is afforded by the recognized distinction between what *really is* valuable and what merely seems to be valuable. This objection was urged against hedonism at the very dawn of European ethics, when it was contended that pleasure is an illusory experience of value (or seeming good) which reason corrects, or a merely provisional experience of value which reason confirms. The same objection is embodied in the assumption of common sense that present inclination, instead of constituting unimpeachable evidence of value, is often false and misleading.

I should be the last to dismiss this consideration lightly. Any view of value is bound to take account of it, and it is a searching challenge to views such as my own which regard any state of feeling or will as constituting the very datum of value, to which true judgments of value must conform. But I believe that this challenge can be met, and I shall attempt here to meet it.

I am not at present dealing with the contention that objects may be judged good quite dispassionately, or that the subject's existing motor-affective state may be quite irrelevant to his judgment of value. I accept these contentions and have provided for them elsewhere.[1] The point here is somewhat different. It is alleged that the subject's motor-affective state may create a deceptive appearance of value, as perception may create a deceptive appearance of existence; and that a true judgment of value is formed, not independently of the subject's motor-affective state, but by a correction or rationalization of it.

The subject is divisible into two parts, according as it is the subjective state of interest, or the object of interest, that is taken as the locus of false appearance. There is *merely apparent value*, where, the object being assumed, my interest is said to give it an appearance of value which it does not really possess; and there is *the value of the merely apparent*, where my interest leads me to impute value to an object that does not really exist, or is not really what I take it to be. Let us consider first the alleged case of a mere appearance of value created by interest in a given object.

[1] "Value as an Objective Predicate," to appear shortly in the *Journal of Philosophy*.

II

It would, I think, be generally admitted that the truth or falsity of any experience depends on what is claimed for it. Let us take, for example, a belief in life after death. This belief claims that the believer will live after death, and the truth of the belief depends on future experiences of the believer, or on the consistency of the proposition "I shall live again after I die," with other propositions belonging to the domain of biology, psychology, or metaphysics; it depends, in other words, on something beyond the state of belief itself. But it may be claimed, by the believer himself or by someone else, that the believer *believes* that he will live again after he dies, and in this case the belief itself furnishes the final evidence. This does not mean that any such claim on the part of the believer is unimpeachable, for a believer may be mistaken as to his belief, and the fallibility of his opinion about his belief is proportional to its complexity.

Thus a believer may be mistaken as to *what* it is that he believes. His verbal statements need interpretation, and his final interpretation may differ widely from his first. Ask a man in what precise sense he believes in immortality, and he will be puzzled to answer, and is almost certain to correct his answer several times before he is satisfied. A believer may also be doubtful as to the degree of his belief, finding, when some test is applied, that his belief is less firm or enduring than he had supposed. He may also, in a certain sense, be mistaken in supposing that *he* believes in immortality. I mean that while he experiences an indubitable flash of affirmation, nevertheless, when he comes to bring the whole of his mind into play, his memories and forgotten ideas, he finds that "on the whole" he does *not* believe.

How shall we interpret this hypothetical case? Shall we say that there was at the outset no real but only apparent belief? Shall we say that there is a genuine belief only when the belief has been in all possible ways corrected? I do not see how we can adopt this view of the matter without contradicting our initial assumption—our assumption that what was corrected was already belief. We started with uncorrected belief and we ended with corrected belief, but there was belief in all stages of the process. The transition is not from apparent to real belief, but from a real belief that was obscure, weak, and hasty, to a real belief that was clear, strong, and well-considered; or from an affirmative to a negative belief; or from a belief in one object to a belief in another. All stages of the process are equally belief, but they are unequal in their degree or in their objects.

Let us turn from the analogy of belief to the case of a motor-affective attitude, such as desire. I desire something, and therefore, according to the view which I am defending, that thing is good;

while the critic, on the other hand, contends that my desiring something means only that it *seems* good, and that it *is* good only when and in so far as my desire stands the test of reason. I reject this interpretation for reasons that have become apparent in my analysis of the parallel case of belief. If it is desire that confers value on its object, then since by hypothesis the initial state was one of desire, *what* I desire has value by definition. There *is* a desire of something, and there is something which, being desired, is good. But as in the case of belief, so in the case of desire, I may claim more than is justified. I may be mistaken as to precisely what it is that I desire, and this mistake may be corrected by a clearer elucidation of the object. I may be mistaken as to the degree of my desire: that is, I may desire the initial object less intensely than I thought; or, when compared with other objects, it may occupy a lower place in my scale of preference than I had supposed. Finally, I may be mistaken in supposing that *I* desire the object in question. It may transpire, in other words, that while that object appealed to my taste or appetite, nevertheless *on the whole*, my other interests having had an opportunity of asserting themselves, I turn away from it with indifference or repugnance. In the light of reflection I may not only modify, but even reverse my judgment. That which my immediate appetite commends my total self may condemn.

Every particular interest tends to be misleading in so far as it tends by its very existence to exclude ulterior considerations. Professor Homer H. Dubs calls attention to the case of false ambition. That a youth should yearn to be a sculptor does not prove that sculpture is good for him, since it may be an unattainable goal which dooms him to defeat.[1] In this case, however, sculpture is not wholly lacking in goodness, but is less good than evil: being good in relation to his present desire, evil in relation to his life as a whole, when account is taken of his later frustrations and conflicts.

There are certain types of interest which are regarded as peculiarly untrustworthy. This is true, for example, of passion, of greed, of morbid appetites, and of selfishness. They are untrustworthy, however, only in a specific sense: when taken, namely, as indices of a more inclusive interest. A cool or moderate inclination is a trustworthy sign of good, because its object is less likely to conflict with the objects of other interests. Passion and greed tend to excess, and are likely to be regretted in the light of my interests "as a whole." Morbid appetites are "unwholesome," in the sense of violating a healthy balance of activities; or in the sense of substituting a dependent value for the independent value which originally conditioned them. When a means is erected into an end, it may cease, through the exaggerated attention it receives, to operate effectively as a means;

[1] *International Journal of Ethics*, 1930 (40), p. 479.

or it may obscure the end. I am then said to lose sight of my "true interest," namely, the interest which first moved me, and which may have been a greater interest than that which replaces it. Thus the miser has lost sight of the many goods which money will buy, and the sexual degenerate has become incapable of the higher forms of love. Similarly, selfishness consists essentially in the abeyance or atrophy of the humane propensities.

Another case which is commonly cited is that in which I fail to enjoy what I have exerted myself to achieve. It often happens that when I realize my desires I suffer disappointment, and my desire is then said to be proved mistaken, and to have misled me as to the value of its object. The correct analysis is, I think, as follows. Self-conscious desire presents its object to me as desired, and hence as good—on the theory that whatever is desired is *ipso facto* good. No correction of *this* judgment is possible unless there should be later evidence that I did *not* desire the object. But desire is often accompanied by an expectation of future enjoyment. Where there is no such expectation I cannot be said to be *disappointed* if such enjoyment does not materialize. The successful culmination of desire may be simply succeeded by indifference or even dislike, and this will lead me to assign a contrary predicate to what I previously deemed good; but such a later judgment is not *retroactive*, does not *correct* the earlier judgment, except in so far as there *was* some earlier claim which is now disproved.

The untrustworthiness of all of these modes of interest lies in the rôle which they play as *signs* or *representations*. They fail in respect of what is claimed for them. The error lies not in the interest itself, or in the immediate sense of the goodness of its object, but in associated judgments or assumptions to the effect that their object is good in some ulterior sense; precisely as error in judgments of perception attaches not to the act of sensation itself, but to the accompanying expectation of ulterior experiences.

III

Let us now turn to the second division of our subject—the value of the merely apparent.[1] Professor Dewey has laid great stress upon the fact that value arises in connection with a grasp of the object's meaning.[2] *a* is good when I desire or like it, *for*, or *as being*, such and such. Although I see no good reason for rejecting the limiting case in which the object of interest is immediately presented, I can scarcely be accused of having neglected the fact that the object of interest

[1] I shall deal with this topic briefly because I have considered it fully in my *General Theory of Value* (§ 247), and do not think that my critics have added anything.

[2] *E.g. Journal of Philosophy*, 1925 (*22*), p. 131.

is ordinarily *represented*, or, as I have expressed it, "mediated." Now the object's meaning or mediating judgment may be false, and it has been argued that its value should be regarded as only tentative until this has proved true. In that case a desired or liked object would only seem to be good, until all doubt should be dispelled or to its *being* what, in desiring or liking it, I take it to be. But this view is, in my opinion, confused. If I desire a medicine which I suppose falsely to have a certain therapeutic effect, then it does not have the *potential* value which I ascribe to it: that is, it is not such as I would desire if I knew its effects. But I know of no reason why the medicine should be denied that value which it derives from my efforts to obtain it or my willingness to pay a price for it. It could not be denied value on any principle that would not imply the valuelessness of a great part of economic value, or that would not imply the valuelessness of most of the objects of hope and aspiration. Furthermore, to reject the value of a fictitious object merely because it is fictitious obscures the real reason for their comparatively small value. When the value of an object is founded on error, that value tends to be transitory, because the effect of experience and enlightenment is to dispel all liking and desire for it.

One of my critics[1] has asked why, since I admit that an object must be judged in order to be valuable, I do not take the small additional step of admitting that it must be judged *valuable* in order to be valuable. The answer is, of course, that epistemologically this is a crucial step, since it involves the fatal admission that the act of judgment itself creates the fact by which its truth or falsity is determined. In my view the fact of value consists in the occurrence of an interest-in-something. The judgment which refers to this fact, that is, the judgment of value, can be disputed only on the ground that there is *no such interest*. Such a judgment is not infallible, in the sense that what is judged valuable is *ipso facto* valuable, for the interest (like anything else) may be judged falsely; nor is it disproved by the discovery that the object of the interest is not what it is judged to be, any more than a judgment to the effect that I believe the earth to be flat is disproved by the discovery that the earth is round.

IV

The general motive which governs me in this analysis is a desire to exhibit all of the relevant facts. Mr. Bertrand Russell has recently announced his abandonment of the view "that 'good' is an indefinable notion," and now thinks "that good and bad are derivative from desire"; but he goes on to say that he does not "mean quite simply that the good is the desired, because men's desires conflict, and 'good'

[1] Dr. Orlie A. H. Pell, *Value-Theory and Criticism*, 1930, pp. 41, 56.

is . . . mainly a social concept, designed to find an issue from this conflict."[1] I quite agree that harmony is better than conflict, and that the avoidance of conflict affords the chief motive of personal and social morality. But I am concerned to point out that a harmonious purpose is itself a kind of desire, achieved by integration; and that the claims made in its behalf must appeal to the original desires that it harmonizes. Instead of making an abrupt beginning at the point where conflict is avoided, I think it is more illuminating to point out the continuity of the process and the homogeneity of the subject-matter.

Furthermore, I take it that Mr. Russell, like myself, regards harmony as good, not "quite simply" because it is harmony, but because it reconciles and provides for the constituent desires. But if there is no good in desire as such, what good is there in providing for them? It would be quite admissible to reserve the term "extension" for solids, having a volume, let us say, of one cubic foot. But I submit that this use of words would be likely to obscure what solids have in common with planes and lines, as well as the real nature of dimensionality, and the important fact that volumes and planes are multiples of lines. In short, the view which I have proposed seems to me to keep clearly in view the generic character of the domain of value on all of its levels, while at the same time providing for these differences of level, and explaining the precise sense in which some are higher than others. The difference between one level and another is not a difference of appearance and reality. Values of all kinds and degrees are equally cases of value, and this both permits us to recognize and enables us to understand the fact that they are by no means equally valuable.

[1] *Philosophy*, 1927, p. 230.

TRADITION

MICHAEL KAYE, M.A., PH.D.

MUCH has been said on the importance of the individual: the individual is to be respected; there is value in his self-assertiveness; his desires merit fulfilment. Yet it has been remarked not less that the individual is not independent; for his sustenance and his satisfaction he needs to have commerce with nature and society; and the term "tradition," which makes us mindful of the prolonged, apparently interminable succession of the generations, reminds us also that in the universal procession of events the life of the individual is but as nothing, that it is very fragile and inevitably ephemeral; and that torn from the fabric of his community, deprived of the gifts of his ancestors, denied all vision of the generations of futurity, unenriched by a feeling of kinship with the universe which is one and eternal, the life of the individual would be pettier and more insignificant than it may seem to be even now.

The individual who, at birth, seems at one and the same time to emerge from, and to enter into, the universe, receives therein, and is received into, a definite place and a definite home. And in that home there is pressed on him a definite kind of environment which requires him, and would seek to compel him, to follow a definite kind of life.

The life of a king or of a slave, the life of the scholar, of the soldier, of the ecclesiastic, of the artist, of the politician, of the merchant, of the artisan—to such different kinds of life as these, different in respect of function, and also, it might be held, in respect of value or desirability, different individuals are solicited for their allegiance according to their different homes; in different homes different kinds of life have become traditional.

Now it is conceivable that the form of life which is presented to him at once as a gift and as a command, the individual may refuse to accept; yet it is most probable that he will accept it, and this because he is naturally imitative. Spontaneously he tends to do himself as those around him do; the young imitate the old; the generations tend to repeat one another. And thus in the succession of the ages certain kinds of life have come to persist; they have achieved a semblance of immortality; they are as universals which live unceasingly through successive embodiment in those fleeting particulars who are imitative individuals.

Not only, however, do the young display "passive" imitation

with respect to the old, but the old display "active" imitation with respect to the young. The elders, who themselves have taken their way of life from previous generations, seek to hand it on to their children and their children's children; the tradition that has come to them from the distant past they would endeavour to hand on to the distant future; they would be faithful to it themselves, and would perpetuate it through others. But why?

Doubtless, first, because active imitation is natural to us, alike to the child and to the adult. We appear disposed to such behaviour spontaneously, unreflectingly. The child says, "Come and look at this pretty picture," the adult says, "Love and follow my laws and customs and institutions." For no purpose explicitly apprehended, we seek to conserve the actual, to perpetuate the familiar, to repeat ourselves in ourselves, and then, when we are gone, in the generations who are to succeed us, and may in a manner prolong us. It is as though each individual would grip all other individuals because he and they are moments of a life universal, which thus manifests itself in them not because they would deliberately have it so, but because inevitably it must be so.

But also we may attempt to impose our life on others because we are deliberately selfish. It is not merely that we may seek to express our tendency to active imitation, while clearly aware that thereby we shall be causing hurt to others; we may be selfish not merely on behalf of this tendency, but in the sense that we may employ this tendency as instrumental to the satisfaction of our desires in their variety. Thus society cannot but ensure the specific education of its children out of regard for the welfare of itself; and unless the children who are born to us come, in various important situations, to imitate us, they will be as an impediment to the smooth working of our own lives. Of more importance here than the wants of the young are the wants of the old; and we who, in virtue of our age, possess the power, have to bend the young to our will, and to our will that they should imitate us, lest by their differences they shatter for us whatsoever of harmony and automatism which we have realized in our own lives, and of which we have grown fond. We want others to follow us because differences offend us; but further, we want others to follow us because differences may harm and destroy us. For if we are actively imitative and others are passively imitative, it is also true that we are passively imitative and others are actively imitative. And so, at the same time as we cling to our own way of life, think that we love it, and would preserve it for ever, we fear that we may lose it, and fear that we ourselves may do it violence. We doubt our faithfulness towards it; our stability is always precarious; our fickleness is always evident;

wherefore we cannot but suspect that should forms of life come to surround us which are opposed to our own which we love, we may yet be tempted to follow them. Moreover, we have reason to fear that others will seek to compel us to follow their own and opposed ways of life; and so, to reinforce our faithfulness to the way of life which is ours, we seek to make all others follow us. And is it very uncommon to find children seeking to bend to their will their parents, when the latter, for whatever motive, have neglected to bend to their will their children?

It is, however, possible that our primary purpose for endeavouring to perpetuate a tradition may be altruistic rather than selfish. For if a certain manner of life is good for us, may we not conclude that it must be good for others also? There are certain kinds of life which we have come to appreciate as really valuable, as real values; to be such as, if we follow them, really contribute to our satisfaction, and, unless we follow them, render it impossible for us to obtain fullness of satisfaction from anything else. The life, for example, directed to the revelation and contemplation of the world; the life directed to the creation and contemplation of the beautiful; the life directed to the welfare of others; these kinds of life, the life intellectual, the life æsthetic, the life moral, have come to be esteemed as possessed of real value, as conducive to, and necessary for, the individual's real satisfaction, as soliciting us, therefore, for our own love and adherence, and as imposing on us the obligation to help on others to pursue them. As Professor Gilbert Murray has said: "There are—or so the Greeks put it in their old fashioned habit of thought—there are such things as Truth, Beauty, Virtue. We know that we can find, not all truth, but at least some truth. We know we can create beauty. We know we can live, or try to live, in the pursuit of goodness. . . . This is the true message of our Hellenic and European tradition. . . . Live in the service of something higher and more enduring, so that when the tragic transience of life at last breaks in upon you, you can feel that the thing for which you have lived does not die." There are kinds of life which won the devotion of our ancestors, and which we have come to love for ourselves; is there not presumption, then, that our successors likewise must come to love them, that they are lovable intrinsically and of necessity, fit, therefore, to be perpetuated as universals through the generations of imitative individuals, as necessary, in the nature of things, to the real satisfaction of these individuals? At any rate, such a manner of thought is not unusual; and so it comes about that the social revolutionary—on paper, as Plato, in actuality, as Lenin—who would erase the old society that he may found a new one more truly for the good of all, once he has succeeded in his task,

becomes eager to "conserve the revolution"; he becomes, in effect, a conservative, a conservative of the deepest dye, a conservative violently opposed to all revolutionaries; he becomes anxious, for altruistic reasons partly, but now not entirely, to found and perpetuate a new tradition.

Yet we cannot be at all certain that what has proved for the good of our ancestors and of ourselves will necessarily prove for the good of our successors also; and, indeed, we have to face the view that there is nothing in the world which is good at all, that the values we speak of are in fact illusory, and that in following them and praising them we are fools or hypocrites. This is the view of pessimism: "Vanity of vanities; all is vanity." And if this view be correct, then a man can have no altruistic justification for giving birth to children, and endeavouring to persuade them to the way of life which is his or another's. For, "Wherefore is light given to him that is in misery, and life unto the bitter in soul?" "Let the day perish wherein I was born, and the night in which it was said, There is a man child conceived." Nor can we but recognize that this cry of pessimism has been uttered not seldom. For our life is uncertain; it is full of a thousand pains; and the things that we would cherish most, if we can attain to them at all, are usually torn from us the moment we begin to enjoy them. The cradle means the grave, and the life between seems utterly pointless, a tale told by an idiot, signifying nothing: without desire it is empty and savourless; with desire it is as a mad perturbation. Nor is there much to be gained from the traditional poise of philosophy; for though we believe much, we know little; indeed, we do not even know what we mean by knowing. And despite an optimism which we may vaunt at moments, notwithstanding even a mental placidity which is appreciably actual, there are yet occasions when our sunlit, coloured world seems to shake, our perceptions and schemes of concepts to lose their objects, our dreams to fade into shadows, or to become suddenly terrible with an incomprehensible solidity, our whole spirit, the elusive essence of our being, to cry out in the enveloping darkness and loneliness that all is weariness, futility, and complete vexation. And this cry of the heart, this shout to the heavens which strong men may still before it shall have become articulate in the world, this, we surmise, is among men universal, and is not at all foreign to the gay, the proud, and the smart. We are frail; we are trivial; we flit after petty pleasures and repeat silly jokes; we laugh that we may not weep; continually frustrated and inevitably impotent, we make a mockery of our profoundest desires; and hungry and tortured ourselves, we exhibit delight in a nasty cruelty, in hurting and humiliating one another; weak

and bewildered in an unintelligible vastness, fettered in a world enigmatically hostile, we yet seem to have no more urgent purpose than to lacerate ourselves, and to be as whips and scorpions and the knife of the assassin to our fellows. Such is the life which is ours, yours and mine; such is our life as though inevitably, so that no one is especially to blame for it, although every one has to suffer it; but if so, how can we say that it is our altruism which would prompt us to hand it on to others still unborn? Doubtless there is ground for the view that children will be for our good; but is it tenable that their birth will be for their good? And though we may have to grant that the birth of children seemingly must be —the "vital force" will not be denied—yet we are not thereby compelled to admit further that therefore it ought to be; and can we find any other reason that it ought to be?

The only possible answer is the one we have glanced at already: notwithstanding that we are pigmies and mortal, in the flux that is our life we find much in which we may rejoice; in autumn as well as in springtime, in darkness no less than in noonday brightness, we may discover in our world a splendour, and in ourselves such adoration as means acceptance and ineffable contentment; we can snatch happiness from much that must be fleeting, and we have the capacity to create what may abide beyond us, and even to achieve for ourselves a kind of immortality. Though reality tears from us what we would cling to for ever, though it may cause us to love in vain, though it give to us pain and death, yet it presents to us a world which is an enchanting spectacle, it intoxicates our senses, it gives us imagination and thought and affection, and it assures to us, if only we be content to identify ourselves with it, even that immortality which is its own. In comparison with what we can imagine and what we would voice as our heart's desire, doubtless it is all very sorry which we would shatter to bits if we could; yet in comparison with nothing it may be appreciated as potentially excellent, of which the realizing experience it would therefore seem incumbent on us to ensure and perpetuate.

But the difficulty is to determine by what particulars we may transform potential excellence into actuality. And here we need to remember that our heritage from the past is various, containing evil as well as good. Our fathers toiled, and what they achieved, but with death had to surrender, exists still to be enjoyed by ourselves. Much is offered to us. Through perception and imagination and thought, we may acquire a variety of technique and vision and pleasurable emotion; farmers and seamen, scholars and artists and thinkers and researchers, men who love and adventure and create, men consciously members of a family, of a nation, of the

universe, the lives of all such pass through moments where there is great beauty, and participate in triumph and peace as well as in fatigue and despair; and such lives through the generations are progressively perfected, and children may enter into the inheritance. Now, to a degree, we may look at our fellows after the manner of Jesus of Nazareth; now, to a degree, we may look at our world through the minds of Plato and Spinoza and great men who think to-day; and as we do thus, we find ourselves in a world of spaciousness, and we enjoy affection, self-transcendence, and assurance. Yes, let us now praise famous men, and our fathers that begat us. The world which receives us, and which we ourselves may receive, has beauty and the life of mind; and the efforts of our fathers have made the vision for us ever more splendid, and our enjoyment ever more profound; we have not to start from nothing; awaiting us are home and companionship, and beneficent impulsion towards contemplation and creation.

But the strangeness of it all is that by our fathers, by human society, just as by the universe in general, we seem to have thrust on us what makes for pain and death, as well as what makes for life and fulfilment. We have to approach the traditional with an open mind. For what comes to us from the distant past, what therefore seems destined, because it has endured so long already, to prolong itself into the distant future, has a halo about it if only because of its associations with vastness: the traditional would claim our respect simply because it is the traditional. Moreover, must not what has lived on, be possessed of fitness and strength? But fitness for survival in the natural order is to be distinguished from fitness for survival in the moral order; nature red in tooth and claw survives, but it is not obviously for man's good; nor is it true that men's actual customs are always desirable customs; the traditional is not necessarily the veritably moral, although we want the moral to become traditional.

And so we witness a modification of traditional notions concerning morality itself. We are returning from a concentration on mere rightness, on mere obedience in respect of laws and commands, to an effort directed to the discovery and ensuing of the good. This is not to say that the traditional virtue of obedience deserves at once to be rejected, for obedience may be for our good; but we need to obey not for the mere reason that we shall be punished for disobeying, but because we understand that what is commanded us is for our good, although we may fail to understand how this in detail is so; it may be good for us—we can clearly appreciate this—that we should accept certain suggestions on authority, that as disciples we should follow such men as we can respect as our truest friends, older and wiser than ourselves.

Similarly, then, if there exist a God of Love, we may accept, as designed for our good, what is commanded of us by Him; yet, at the same time, we cannot be sure that what have come down to us traditionally as the revelation of God's demands of us are so in fact. Moreover, it will be a sign of our progressive maturity as we advance towards goodness while accepting suggestions on authority less and less, as we do the good not because it is commanded us as for our good, but because we see for ourselves that it is good; and if there exist a God of Love, He, like the good parent and the good teacher, must desire to make Himself as far as possible dispensable.

The good, then, is what we have to find; and what we may learn of as the efforts of our fathers, in practice and in theory, to find the good for themselves, it behoves us to welcome as what may help us in our own search. We learn from mistakes, and from the mistakes of those who have preceded us. Moreover, in his mistakes a man may yet show himself a moral hero; scattering over the land disease and pillage and torture and death, men have thereby sought, even at the cost of the completest sacrifice of themselves, to achieve abiding good for their fellows; such men were moral heroes; they fought and killed and suffered and died not for mere selfish purposes, but for the good of all; they manifested a gigantic allegiance; resolutely, notwithstanding temptation and anguish, they were loyal to the good as they saw it; they were moral in their errors, and heroic in their morality; and as moral heroes they deserve that we should remember them and do them reverence. Nevertheless, while seeking to imitate them in respect of their moral resolution, we should yet aspire to a truer vision of the detail necessary for the realization of the good; they were moral and heroic, but not sufficiently wise; and for the achievement of the real good we require moral resolution to be directed by wisdom. Now, as men of peace, in all sincerity we may remember and respect those whom history hands down to us as great selfless soldiers; but equally in all sincerity we may be convinced that peace, and not war, is the way to the real good. To criticize men, and seek to do differently from them, is not necessarily to cease respecting them, or feeling grateful to them; we may respect them for their faithfulness to the good as they apprehended it, and we may feel grateful to them for what they have taught us, even by their errors.

To-day we know that we have to think and search. The good is what will profoundly satisfy us, what will yield us abiding satisfaction in respect of the totality of our needs and desires; and the good man is he who seeks for the achievement of such good for the sake of all. What has come down to us from the past

by way of knowledge and art, social organization, methods of agriculture and industry, is a mighty help to us in our efforts towards the good; but we need to beware of accepting the given as the perfect. Lacking knowledge, we may need to rely on faith; but not necessarily on old faiths; to a working hypothesis we cannot accord the right of permanence; and if we would be sincerely altruistic towards our children and pupils, we need to forbear from foisting on them our own methods of life for the mere reason that we have become enamoured of the familiar and prejudiced against the new. The old may be good, and it is not certain that the new must be better; there are many good things, each in its own way; each is perfect in its individuality, they cannot be compared with one another; and such good things may exist at different times; to their goodness the time of their emergence is irrelevant; Shakespeare does not eclipse Shaw, nor Shaw Shakespeare; in the temple of Art the mansions are many. Undoubtedly, then, it were well that this should be remembered by certain Moderns; but also it were well that it should be remembered by certain Ancients. The great thing, indeed, is not to exaggerate the factor of time in any of its periods—whether the present, or the past, or the future; and we have to evaluate a method of life not according to its date and age, but for its effectiveness in conducing to our abiding satisfaction.

To evaluate thus, we have to experiment; and if we need to put to the test suggestions for new methods of life, it also behoves us to remember old ones. For in respect of capacity to promote fulfilment and happiness, it is not certain that, in religion, the hypothesis of atheism is better than the hypothesis of theism; that promiscuity is better than monogamy; that the life of the modern spinster, free, wealthy, learned and masculine, is better than the seemingly more restricted life of the old-fashioned wife and mother; that, in political and industrial organization, management by committee is better than management by powerful disinterested individuals; that a life of luxury is better than a life of simplicity. But to the old, as to the new, we need to go in the attitude of experiment; always we have to retain an open mind to rise superior to mere obstinacy and prejudice, to treasure the truth wherever it appears. And it is precisely in this attitude of experiment that we seem to have what is worthy of perpetuation as a tradition; and with this we need to reconcile whatever else of tradition we would cherish and seek to conserve.

PHILOSOPHICAL SURVEY

PHILOSOPHY IN FRANCE

The past year's philosophical publishing in France suggests two things. The first is that the original work of really high order illustrates the view, characteristically French, that the originality that is important to philosophy (as distinct from merely meritorious in the philosopher) is one that is displayed no less in the selection and advocacy of supporting evidence (which is unfailingly sought in the field of positive science) than in the attractiveness or newness of the thesis that is to be so supported. From Descartes to Meyerson, those philosophers of genius or of exceptional brilliance who have not conceived their *idée directrice* as necessarily to be supported (and not simply illustrated) by some fund of scientific evidence—mathematical, physical, biological, sociological—are fewer than the fingers of one's hand. In the second place, those works that would not be called in the same sense 'original' (since they are occupied with elucidating textual difficulties or with interpreting a 'past' philosophy in a manner more understandable to-day) confirms the continuance of excellence and precision in scholarship, clarity, and simplicity in expression, which is another trait, not only of French philosophy but of French culture generally. Good instances of these two characteristically French merits are provided, respectively, by Meyerson's last work, *Le Cheminement de la Pensée*,[1] and by Gilson's last volume of Cartesian studies. These, however, are the 'high-lights' among recent French publications, but there is much besides to support the opinion that the current of best philosophical work in France is still in line with those traditions.

The various essays composing Professor Gilson's fine volume[2] all originated in an attempt to discover what could be learnt about the Cartesian system by confronting it, in its historical setting, with mediæval theology, philosophy, and science. Not, M. Gilson tells us, that he had the *naïveté* to consider Descartes a scholastic philosopher, but that he sought to emphasize further the directing idea of his earlier writings, viz., that "the history of mediæval thought includes the history of Descartes' influence, just as the history of modern philosophy includes that of Descartes' sources." The present studies are accordingly grouped to form two 'parts,' the first relating to the mediæval sources of some Cartesian doctrines, the second dealing with Descartes and Mediæval Metaphysics. The first part (three chapters on "Cartesian Innatism and Theology," "Descartes, Harvey, and Scholasticism," and "Cartesian Meteors and Scholastic Meteors") is reprinted from the *Études de Philosophie médiévale*, long since out of print. In the new material (based on lectures M. Gilson delivered in the Universities of Brussels and London) there is an extremely valuable investigation of Descartes' criticism of 'substantial forms' and his methodical doubt, and papers on the *cogito* and the Augustinian tradition, the proof of God by causality, the 'new idea of God,' Divine veracity and the existence of an external world, Thomist and

[1] É. Meyerson, *Le Cheminement de la Pensée*. Two vols. Paris: Alcan. 1931. 120 fr. The survey of Philosophy in France in the July number of this Journal will be devoted to a notice of this work.

[2] É. Gilson, *Études sur le Rôle de la Pensée médiévale dans la formation du système cartésien*. Études de Philosophie médiévale, XIII. Paris: Vrin. 1930. Pp. 336. 40 fr.

Cartesian Anthropology, and Descartes' relation to Anselm. Even a full notice could convey only a faint idea of the vividness and 'solidity' of the final impression M. Gilson creates in the reader's mind. Time and again one feels that the whole situation confronting Descartes in his day is reinstated in one's present experience. To single out but two brilliant chapters: in Pt. II, ch. i, the intimate connexion between metaphysics and physics in Descartes' system is discussed more thoroughly and cogently than by any other Cartesian scholar known to me. Again, M. Gilson's approach to Descartes' proof of God's existence through the Thomist proof illuminates in a remarkable way how Descartes' treatment of the matter would have struck the average Thomist reader of his day. It should be said that M. Gilson's work is a 'specialist' performance (in the best sense of the word), presupposing an extensive textual knowledge, and therefore not a suitable medium for making a first acquaintance with the father of modern philosophy.

It is a matter for congratulation (and not only by those who have traffic with dealers in 'rare' books) that the late Paul Tannery's epoch-making study of 1887, *Pour l'histoire de la science hellène*,[1] has appeared in a second edition, with all the typographical excellence associated with the name of MM. Gauthier-Villars. To this great savant, at once expert in classical philology, mathematics, and philosophy, all modern students of the Hellenic history of the exact sciences are eternally indebted. Not only did Tannery introduce new methods and hypotheses that revolutionized so largely as, in fact, to create this branch of research in its present form, he also extended his gigantic energy into the fields of Greek, Byzantine, and Mediæval mathematics,[2] and co-operated with Charles Adam in editing the official edition of Descartes' complete works. In the eighties, French scholarship, however *empressée*, was never *hâtive*, and the *Science hellène*, the composition of which occupied ten years, is a monument to that artistry which, in reconstructing and reinterpreting fragmentary traces of early science, seeks to show how eminently *reasonable* it is in the light of the data then available, and how, to its inventors, it seemed very different from the half-comprehensible mixture of paradox and nonsense it so often appears in modern textbook summaries. Historically, Tannery's work marks a double reaction, on the one side, against the meagre compound of translation, paraphrase and annotation previously prevalent, and on the other side, against that school (now mainly known through Zeller) which interpreted ideas properly scientific through metaphysics historically posterior to them, and more, a metaphysics construed with a markedly Hegelian bias. Thus, for instance, Tannery refuses to read the antithesis between Being and Becoming and the central conception of Heraclitean philosophy into the doctrines of the Eleatics. He shows forcibly of Eleatic teaching in general, and of Zeno in particular, that far from being trifles of sophistry they form a most important '*reductio ad absurdum* argument' of the earlier Pythagorean theory of space. Again, in the Pythagorean thesis, "Things are Numbers," Tannery sees the first attempts at infinitesimal analysis among the Greeks—to be sure a most daring inference in 1887, but one that has since been confirmed by a MS. of Archimedes discovered by Heiberg. A further case of Tannery's originality and ability to recreate the original situation and outlook of a thinker is found in ch. xii. Here, unlike the standard histories, he does not fasten on the conception of *νοῦς* as central

[1] P. TANNERY, *Pour l'Histoire de la Science hellène: De Thalès à Empédocle*. Deuxième édition, par A. Diès, avec une préface de M. Frederigo Enriques. Paris: Gauthier-Villars. 1930. Pp. 435. 80 fr.

[2] *Mémoires scientifiques de Paul Tannery*. Publiés par Heiberg et Zeuthen. Vols. I–XII (prices ranging from 30 fr. to 60 fr. per vol.). Paris: Gauthier-Villars. 1912–1930.

in Anaxagoras' system, but concentrates attention on his theory of matter, gives an original view of its significance, and exhibits the place of Anaxagorean thought in the Platonic theory of Ideas. The editing of this edition has happily fallen to Professor Diès, who conceives it his "most obvious duty to respect absolutely the text of the first edition," and limits himself to incorporating as footnotes corrections Tannery marked in his own copy, and to adding as appendices articles and letters Tannery published subsequently to 1887. Among other useful additions of the editor are a good doxography of each thinker, copious translations supporting references in the text of each chapter, and a fourteen-paged bibliography of principal memoirs and articles on pre-Socratic thinkers.

Those who seek a straightforward introduction to the detailed and erudite work of Tannery cannot do better than resort to Professor Loria's brief but full and very readable account of the development of pure and applied mathematics in Greece.[1] The essentials of the whole story are simply told from Egyptian and Babylonian beginnings, through the Golden Age of Euclid, Archimedes, and Apollonius, down to the astronomy of Ptolemy and the rise of geometrical optics and geodesy. The closing chapter on "The Greek Spirit in Modern Mathematics" is suggestive and regrettably brief.

The standard work in French on Aristotle has been that of the late Sorbonne professor, Octave Hamelin. Recently, however, the Aristotle of W. D. Ross of Oxford has been translated,[2] and is warmly recommended by Dr. Parodi in his preface for its *probité scientifique rigoureuse* and for the *souci d'exactitude* of its author. One obvious point of contrast between Hamelin's *Système* and Ross's book is the latter's attempt to present an Aristotle free from the *cadres* of a 'system'—an effort that inspires "*pleine confiance*" in Dr. Parodi.

A further volume has appeared under the auspices of the Association Bude,[3] which exists for the defence and propagation of classical culture. This is an edition of Plato's *Symposium*, a text, translation, and fully documented introduction of some hundred pages by Professor L. Robin.[4]

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Among the great moderns in European philosophy, if any two have exercised less influence than the others in France, presumably they are Leibniz and Hegel. This is not to suggest, however, that French philosophers have neglected to study their works. The November issue of the *Revue de Métaphysique et de Morale*, for instance, is wholly devoted to Hegel, as a *numéro exceptionnel* commemorating the centenary of his death. Of the seven contributions by MM. Nicolaï Hartmann, C. Andler, V. Basch, R. Berthelot, B. Croce, M. Guéroult, and E. Vermeil, the first four are particularly good. And regarding Leibniz, Professor Maurice Blondel has brought out an annotated translation of his Sorbonne thesis of 1893 on the *Vinculum substantiale* in Leibniz.[5] This rather irritatingly obscure doctrine Leibniz can only be said to

[1] G. Loria: *Histoire des Sciences mathématiques dans l'Antiquité hellénique*. Paris: Gauthier-Villars. 1929. Pp. 215. 30 fr.

[2] W. D. Ross, *Aristote*. Préface de D. Parodi. Paris: Payot. 1930. Pp. 419. 30 fr.

[3] The Association announces a General Congress to be held during four days in the Easter vacation at Nîmes, to investigate questions of philology, of classical teaching, and of the rôle of Humanism in contemporary civilization. An invitation is extended to representatives of foreign learned societies and to *le grand public cultivé*: there will be special facilities accorded for the journey and residence at Nîmes. Particulars to be had of the Secretary, 95 Boulevard Raspail, Paris VI[e].

[4] Platon, *Œuvres complètes*. Tome IV, 2[e] partie. *Le Banquet*. Texte établi et traduit par Léon Robin. Paris: Société d'Édition "Les Belles Lettres." 1929. Pp. cxxi + 184. 25 fr

[5] M. Blondel, *Une Énigme historique: le 'Vinculum substantiale' d'après Leibniz, et l'Ébauche d'un réalisme supérieur*. Bibliothèque des Archives de Philosophie. Paris: Beauchesne. 1930. Pp. xxv + 145. 30 fr.

have 'sketched out,' and the 'sketch' is to be found in only one place—the correspondence with the Jesuit Des Bosses. But, Blondel points out, unmethodical as that discussion is, defective and hesitant as is the answer eventually returned, the problem itself is not the negligible side-issue that Erdmann and some other historians have supposed. The correspondence opens on a theological controversy (the Eucharist), but the matter really *en jeu* is emphatically metaphysical, *viz.*, how is *organization* among monads to be explained? In considering the composition of simples (*liaison substantielle*) the real question confronting Leibniz is whether ontological priority must not in the end be attributed to compound substances over their subordinated and composing simples. A compound that is *unum per se* (in contrast with a collection that is *unum per accidens*) has a unity of quite special kind, and the 'bond of connexion' that individualizes the plurality of simples must be distinguished from the merely phenomenal relatedness of collections. What, according to Blondel, Leibniz is trying to show (but never succeeds in showing) is, (i) that the *vinculum* is not phenomenal in *any* sense (as, *e.g.*, 'collective unity' is), but (ii) is the condition under which ontological status may be accorded to any real compound or *unum per se* that appears diversely (as, *e.g.*, an organism, an embodied self), and (iii) is a "real being," whose ontological status is quite compatible with that of "spiritual atoms" that are simples, and therefore with the primitive principles of the Monadology. In trying to reach a clear theory of the *vinculum* which satisfies those conditions, Leibniz is seen to be departing from the position he held up to 1706, *i.e.* from the view, briefly, that the composition and unity of compounds is "purely mental," and that all relations are "only ideal." So, Blondel points out, though the simple monad is prior to the compound in the order of the Monadology's own internal development, Leibniz comes to realize that the compound is factually prior to the simple. He also sees later that synthesis must be taken as seriously as analysis. The object of pre-established harmony was to account for connexion and synchronization among phenomena, but not for organization and unification among the plurality of monads that make up the numerically different 'embodied selves' perceptive of those phenomena. How unsatisfactory is Leibniz's attempt (negatively, to withdraw forms of unity, connexion and function from dependence on mind, also to 'fit' the *vinculum* into the Monadology; and positively, to work out in detail the exact character of this "real being" that is *vinculum*) is obvious from the merely verbal attempt he makes to *boucher le trou, viz.*, by speaking of "quasi-substantia," "semi-realis" as indicative of *vincula* when discussing organic bodies. Rather than disposing of the problem, these phrases serve, in fact, to call attention to its existence. In his concluding chapter Professor Blondel indicates possible lines along which further explorations may be carried out, and how the hiatus between thought and reality may be spanned by the notion of 'action'—a thesis developed more fully and positively in his well-known work under that title.

In conclusion, I would draw attention to Professor Lalande's *Illusions of Evolutionism*,[1] which is a new edition, corrected and abridged, of his earlier book on Dissolution as opposed to Evolution as the guiding and explanatory principle in the method of the physical and moral sciences. On its negative side, the value of the study consists mainly in its damaging criticism of the Spencerian conception of Evolution, and in exposing the tenuity of his explicative terms. To avoid recurrence of past misunderstandings about

[1] A. LALANDE, *Les Illusions évolutionnistes*. Bibliothèque de Philosophie contemporaine. Paris: Alcan. 1930. Pp. 464. 50 fr.

'Dissolution,' the author now substitutes the term 'Involution' or assimilation, and his thesis is, broadly, that what acquired scientific knowledge shows is not primarily a process of *évolution différenciatrice* (cf. Darwin, Spencer, and the 'Evolutionist school' generally), but a process of involution or transformation from diversity towards unification and greater similarity, and therewith the gradual elimination of differences. This hypothesis is applied successively to interpreting scientific results in each of the grand departments of phenomena—physical, biological, mental and social. Physical transformations, *e.g.*, are brought under the law of degradation of energy and increase of entropy, thus exhibiting a tendency towards equalization of temperatures, and so far towards uniformity. And though transformations among the materials of biology indicate *prima facie* a movement toward greater individuation and greater differentiation of type, there is yet incontestable evidence of involution, in *e.g.* the phenomena of death of organisms, of the fusion of male and female elements in sexual reproduction. Likewise with mental activity, assimilation is the general principle under which fall the more determinate and restricted laws of intellectual development, whilst in the order of social changes, division of work, growth of specialization, which exemplify social evolution in its most general phases, are simply a "continuation of a biological process" which, far from facilitating, often checks, the current of human progress, so that social development is seen historically to consist rather in an advance towards equality—towards a unification that predominates over the diversifying tendencies engendered by unfavourable conditions. Differentiation is thus a sort of accidental bye-product, an excrescence, of a more pervasive movement towards unification that is exhibited in the transformations of living organisms and in the history of social life alike. S. V. KEELING.

PHILOSOPHY IN GERMANY

SUMMARY: *This survey deals with three books; (i) The first volume of* German Systematic Philosophy, *edited by Hermann Schwarz; (ii)* The Theory of the Gestalt, *by Martin Scheerer; and (iii)* Aims and Methods of the Present-Day Philosophy of Nature, *by Hans Reichenbach.*

HERMANN SCHWARZ, of Greifswald, is editing, under the title *German Systematic Philosophy*,[1] a series of volumes in which German philosophers give short accounts of their principal views. The series naturally reminds one of *Personal Presentations of Contemporary Philosophy*, edited by Raymund Schmidt. But the aims of the two series differ. The latter has a biographical purpose, and its contributors describe the circumstances in which their views developed. Schwarz, on the other hand, seeks to make philosophers their own interpreters. Seeing how much time has been spent in summarizing the work of past philosophers, he sets the philosophers of to-day to perform the task for themselves. Accordingly, *German Systematic Philosophy* contains only philosophical statements. The first volume has contributions from Bruno Bauch, Hans Driesch, Nicolai Hartmann, Richard Hönigswald, Hermann Schwarz, and Johannes Volkelt. Because space is limited, only Driesch's contribution will be surveyed.

HANS DRIESCH, of Leipzig, nicely fulfils the editor's purpose. His short account of his own philosophy is both systematic and comprehensive. He sharply distinguishes two branches of philosophy—the theory of order

[1] *Deutsche systematische Philosophie nach ihren Gestaltern*, vol. i. Berlin: Junker and Dünnhaupt. 1931. Pp. vi + 340. RM. 16 (paper), RM. 19 (linen).

(logic), and the theory of reality (metaphysics). Logic, being concerned only with "my world," does not inquire whether the objects of which I am conscious exist independently of my awareness of them. It undertakes simply to determine their structure as it is revealed to my mind; and this, Driesch believes, is the only beginning for a sound philosophy. While the general theory of logic is concerned with meanings (or concepts) and their relations, the logic of empirical reality deals with existents—with my mind and with natural objects. Both my mind and natural existents are objects of awareness, but not immediate objects. I regard them as if they had an independent existence, and logic takes account of this attitude, although it is not thereby committed to the metaphysical hypothesis that they in fact exist independently. We may include other minds as well as our own in the subject-matter of logic, but, since we know of other minds only by analogy, we must be careful to remember that our knowledge of them is even less immediate than that of our own. The most important logical discovery about empirical objects is that they are of two irreducible kinds. Part of the empirical world consists of mere mechanical combinations of elements, and part consists of organic unities. Logically, the distinction is between the partial and the whole (*unganz* and *ganz*), or, more concretely, between mechanical matter and organic entelechy. Entelechy is a non-material activity, manifesting itself in space. (In metaphysics it comes to be regarded as both purposive and psychical, but in logic it should not be regarded as either.) The distinction between matter and mind involves two different kinds of causality—mechanical causality, the determination of part by part, and vitalistic causality, the determination of part by whole.

Metaphysics, unlike logic, *is* concerned with independent reality, and consequently we must ask whether metaphysics is possible. It must be admitted, Driesch thinks, that, since logic comes upon facts which it cannot explain—the fact that we regard empirical objects as independent existents, and the fact that we make moral judgments—it naturally leads to metaphysics. But, in his view, metaphysics is, and must be, extremely tentative. And this for three reasons: first, it assumes that there are independent realities; secondly, it assumes that reality is rational; and, thirdly, in treating the contents of consciousness as consequential appearances of an assumed real ground, and in arguing from consequent to ground, it proceeds in a manner which can yield, not conclusions that are certain, but only hypotheses. When metaphysics deals, not merely with assumed realities *behind* appearances (as, for example, space, time, and causality), but also with assumed realities *beyond* appearances (as, for example, immortality, the plan of the universe and God), it becomes a great deal more hypothetical.

In *The Theory of the Gestalt*,[1] MARTIN SCHEERER, of Hamburg, examines the work of the *Gestalt* psychologists in great detail, emphasizes its fundamental points, and criticizes its psychological method. And, in spite of his attacking certain parts of *Gestalttheorie* from the standpoint of Stern, he impresses upon one the range and penetration which it exhibits. He begins by pointing out that the term *'Gestalt'* was given a new significance by Wertheimer when he applied it to those wholes, awareness of which is both logically and genetically prior to that of their parts. Terms such as *'Gestalt'* and 'whole' have since come to dominate psychology, but there is little important agreement among those who use them. The theory of *Gestalt* worked out by Wertheimer, Koffka and Köhler, is a specific theory clearly distinguished from others, like the personalism of Stern and the structuralism of Krueger, in which the concept of 'whole' also plays a fundamental part.

[1] *Die Lehre von der Gestalt.* Berlin and Leipzig: Walter de Gruyter & Co. Pp. iv + 405.

What, then, are the distinguishing features of *Gestalttheorie*? In Scheerer's view, the chief is one of method—the fact that a certain method derived from physics and biology is used in psychology. This leads Scheerer to his main inquiry: Can the *Gestalt* method give an adequate account of psychological facts? It also leads him to divide his book into two parts, the first dealing with the method, and the second with its value in psychology.

The theory of *Gestalt* originated in experiments on perception which disproved the theory of sensory atomism by showing that the perception of a structure determines the perception of its parts, and that there is an "inner necessity" which accounts for the way in which a perceived whole is organized. From these conclusions, and their significant bearing on the nature of nervous process, Köhler was led to physical investigations and to the discovery of physical *Gestalten*—physical structures whose constituent processes are likewise determined by "inner necessity." When a disturbance occurs in such a structure, there begins a process which ends in the re-establishment of equilibrium. Equilibrium is established by the structure's tendency to produce the simplest form of distribution with the minimum of energy. In every case this tendency determines the character of the structural process, and constitutes its "inner necessity," which is thus purely naturalistic and objective. Every such structure is a *Gestalt*, and the aim of *Gestalttheorie* is to investigate *Gestalt* processes wherever they occur. Hence psychological investigations form only a branch of its activities. Its treatment of psychological problems is rooted in physics and developed through biology. It offers an explanation of organic phenomena, which, without involving vitalism, meets the objections raised against mechanism. The adaptive and seemingly purposive behaviour of living bodies involves, not a purpose, but a *Gestalt* process, which has all the appearance of direction by purpose, though in fact it is determined by causal laws. The *Gestalt* psychologists hold that an organism and its environment together form a structural whole, or *Gestalt*, in which the organism is a constituent with a comparatively high degree of independence. This biological concept of the whole formed by the animate body and its environment is taken to be the dominating concept in psychology.

Scheerer disputes the adequacy of this treatment. He considers in detail the *Gestalt* treatment of different psychological phenomena, as, for example, instinct and 'insight.' He points out in each case how the character of the activity at every stage is explained by the tendency to equilibrium, and how this tendency is used to explain the fact that our activities and cognitions are not haphazard, but adaptive and directed by apprehension of meaning. He believes that the distinctive character of psychical activity evades this explanation. There is, he maintains, too much readiness to explain all phenomena by the same type of structural process, and too much confidence in the objective point of view. The peculiar character of psychical phenomena is due, in his view, to their relation to a self—to their subjectivity. A content is apprehended as significant on account of its relation to a self, not on account of a law determining the behaviour of objective structures. The *Gestalt* method, he concludes, is admirable in studying the behaviour of living beings in their relation to the system of nature, but is unsuited to the specific subject-matter of psychology.

Hans Reichenbach, of Berlin, has just published a little book, *Aims and Methods of the Present-Day Philosophy of Nature*.[1] He says that one

[1] *Ziele und Wege der heutigen Naturphilosophie*. Leipzig: Felix Meiner. 1931. Pp. 64. RM. 1.80.

of the most distinctive features of the new philosophy of nature is its complete break with the past. Its problems are all derived from contemporary science, and it can thus gain nothing from the study of past philosophers. This change of direction is due to its having outgrown the stage of individualism, where every philosopher relied on introspection and solitary work. Philosophy has now become an organized study of scientific results and demands co-operative effort. It is not concerned with the presuppositions of 'knowledge as such'; it is tied to what actually exists or occurs, and is concerned with the presuppositions of actual knowledge alone.

Reichenbach briefly describes the different problems which the philosophy of nature has to consider. Though derived from science, many of them are none the less old. Biology and psychology, for example, present the ancient problem of life. Reichenbach believes that the theory of evolution has brought us nearer a solution of this problem. And, even though evolution be not explained merely by survival of the fittest, it is probable that the true explanation is entirely naturalistic. The facts require a more complicated causal theory than that provided by mechanism, but they do not require the vitalists' assumption of determination by purpose. The two main problems derived from physics are the problem of space and time, and the problem of natural law. Reichenbach holds that the first has been solved, whereas the second is in a notorious state of confusion. The theory of relativity has shown that space and time are not forms which the mind imposes on nature, but objective properties of nature itself. We cannot say what later centuries may discover, but from our point of view the problem is closed. The problem of natural law, on the other hand, is in a state of flux. Modern science long put its faith in the theory that natural phenomena are completely determined. The mathematical theory of probability was at first limited to games of chance, and, though the theory was gradually extended, its function remained a modest one. Scientists believed that its application depended merely on the incompleteness of human knowledge, not on the objective character of things. But, in Reichenbach's view, this subjective theory must be inadequate, because statistical regularities do occur—statistical laws do describe what happens. We cannot believe that nature is simply showing consideration for human incapacity. In recent years a more adequate analysis of causality and the quantum theory in physics have combined to shake the scientific faith in strict causal determinism. The view has arisen that natural phenomena are determined, not by causal, but by statistical laws. It is not the function of epistemology to prescribe rules for nature. If physics finds that strict causality does not apply, this result is of the first importance, and deserves our admiring acquiescence. Reichenbach also refers to problems which do not arise from any particular science. Such is the problem of the ultimate nature of reality.

In his concluding pages he describes the new philosophy of nature as a triumph both of rationalism and of empiricism. It believes that human reason develops and adapts itself to new circumstances, and that there are no limits to the knowledge it may gain. On the other hand, it also believes that experience is the only test of truth. Condemnation of the new philosophy comes from the literary type of man, who is interested in emotional experience, not in scientific fact. This type of man constructs a rational superstructure on his emotional life, and lays it before the world as the only real philosophy. Such an ingenious expression of feeling may be a source of great enjoyment, but not of knowledge.

HELEN KNIGHT.

NEW BOOKS

The Foundations of Mathematics and Other Logical Essays. By Frank Plumpton Ramsey, M.A., Fellow and Director of Studies in Mathematics of King's College, Lecturer in Mathematics in the University of Cambridge. Edited by R. B. Braithwaite, M.A., Fellow of King's College, Cambridge. With a Preface by G. E. Moore, Litt.D., Hon. LL.D. (St. Andrews), F.B.A., Fellow of Trinity College, and Professor of Mental Philosophy and Logic in the University of Cambridge. (London: Kegan Paul, Trench, Trübner & Co. 1931. Pp. xviii + 292. Price 15s.)

This book consists of various papers by Ramsey, some previously published, some hitherto unpublished, ranging in date from 1923 to 1929. He died on January 19, 1930, just before reaching the age of twenty-seven. His achievement during his short life was extraordinary, and his loss to philosophy cannot be estimated. Professor Moore, in his Preface, justly praises Ramsey's clarity, which is of a rare quality. The breadth of his knowledge is astonishing in so young a man, the more so when one remembers that he wrote important articles (not included in the present volume) on economic theory, which were highly praised by Dr. J. M. Keynes. As a critic he was penetrating but not destructive; where he perceived defects he set to work to remedy them. He possessed a perfect intellectual candour, and, as the present volume shows, was always willing to abandon ingenious theories upon which he had spent much time, in response to no criticism but his own.

I do not know whether I am biassed by the nature of my own studies, but it seems to me that Ramsey's most important work was in connection with mathematical logic. In this subject there are three schools. There are the intuitionists, of whom the chief is Brouwer; Weyl, also, must now be reckoned as on the whole belonging to this school. The most surprising of their contentions is the denial of the law of excluded middle. Roughly speaking, they maintain that a mathematical proposition is true if it can be proved, false if it can be disproved, but neither true nor false if it can be neither proved nor disproved. Then there are the formalists, of whom Hilbert is the protagonist. They maintain that mathematical concepts, *e.g.* "2," are meaningless marks on paper, and that mathematics consists of the manipulation of these marks according to certain rules. Lastly, there is the school represented by Frege and *Principia Mathematica*, which is older than the others, but was open to certain objections. Ramsey deals with these objections, and proposes reforms which he considers adequate to meet them.

Ramsey's work is very much influenced by that of Wittgenstein. Following Wittgenstein, he regards the propositions of mathematical logic as consisting of tautologies. Formalists, he says, have considered only the *propositions* of mathematics, while *Principia Mathematica* considered only its *concepts*. To obtain a correct definition, we must take account of both. In order that a proposition may belong to mathematics, it is not enough that it should be capable of being expressed in purely logical terms: it is necessary also that, in virtue of its form, it should be tautologous. Wittgenstein makes a distinction between mathematics and mathematical logic, which Ramsey does not accept.

For him, mathematics consists of completely generalized tautologies. Thus "2 apples + 2 apples = 4 apples" is a tautology, but not a proposition of mathematics, because it contains the ungeneralized concepts "apples." "Any two things differ in at least thirty ways" is generalized, but not tautologous, and is therefore again not a proposition of mathematical logic, which requires both generality and tautology. On this point, I think, Ramsey is right.

In order to meet certain difficulties in the system of *Principia Mathematica*, notably those connected with the axiom of reducibility, Ramsey introduces what he calls "propositional functions in extension." By this he means any correlation of functions and individuals. As hitherto conceived, a propositional function ϕx contains x as a constituent, and its values ϕa, ϕb, etc., result automatically from giving to x the values a, b, etc. But Ramsey considers it possible to dispense with the idea that ϕa says the same thing about a as ϕb says about b. He supposes, *e.g.* (p. 52), that

> "ϕ (Socrates) may be Queen Anne is dead,
> ϕ (Plato) may be Einstein is a great man,"

and so on. By admitting functions of this sort, and distinguishing two kinds among the contradictions, Ramsey rehabilitates the formal system of *Principia Mathematica*, with a certain change in the interpretation of the symbols.

The drawback to Ramsey's functions in extension, in so far as they are not covered by ordinary functions, is that no instance of them can be given. If the individuals in the universe were finite in number and all known, instances could be given by enumeration, but in the absence of these two conditions enumeration is impossible, and no other method of specifying such a function exists. There are, however, many analogies in mathematics. Consider, for example, lawless decimals. An infinite decimal may be recurring, or may follow some more complicated law by which its successive places can be calculated. But if there is no such law, there is no way of mentioning the decimal in question. This seems, however, to be due to what is, from a logical point of view, a mere accident, namely the fact that we do not live for ever. Pure logic must surely be independent of such trivial circumstances. And if the lawless decimal is admissible, so are Ramsey's functions in extension.

It might be supposed that, if no such function can ever be mentioned, extensional functions cannot serve any useful purpose. This, however, would be a mistake. We can make general propositions about classes none of whose instances we know. Take (say): "All the men I have never heard of were not Fellows of Trinity in 1900." I certainly have not arrived at this proposition in the way in which Mill supposed that I arrive at "All men are mortal," *i.e.* by generalization from instances, since, by the very terms of the proposition, I do not know a single instance. The fact that no instances of pure extensional functions are known is therefore no objection to general propositions about them.

If a valid objection exists—as to which I feel uncertain—it must be derived from inquiry into the meaning of "correlation." A correlation, interpreted in a purely extensional manner, means a collection of ordered pairs. Now such a collection exists if somebody collects it, or if something either empirical or logical brings it about. But, if not, in what sense is there such a collection? I am not sure whether this question means anything, but if it does it seems as if the answer must be unfavourable to Ramsey.

From a philosophical point of view, the next most important paper in the volume is one on "Universals," which was published first in *Mind*, October 1925. In this paper Ramsey maintains that there is no difference between

particulars and universals. We can consider his argument most easily by confining ourselves to subject-predicate propositions. The predicates in such propositions can (we will suppose) be analysed into simple qualities. Thus "Socrates is a wise man" is really two propositions, "Socrates is wise" and "Socrates is human." For purposes of argument, let us suppose that Socrates is a particular and wise is a simple quality. Ramsey maintains that we mistakenly make a difference between the sort of propositions in which Socrates occurs and the sort in which wise occurs. We can obtain a first set of propositions concerning Socrates by varying the quality attributed to him. But we see at once that there are innumerable other forms of propositions containing Socrates, *e.g.* "Either Socrates is wise or Plato is foolish." All these forms are collected together in the symbol "ϕ (Socrates)."

But with regard to "wise," he says, we seem *prima facie* to have two collections of propositions, not merely one. We can vary Socrates, and obtain the general form "x is wise." Or we can vary the form of the proposition. For example, "Some wise men are philosophers" is a proposition which, whether true or false, is certainly included in the general form "ϕ (wise)." We could, however, so he maintains, make a similar twofold range of propositions concerning Socrates; in addition to the general form ϕ (Socrates), we could have the more special form, "Socrates is q," where q is any simple quality. The supposed distinction between particulars and universals is therefore illusory. Other possible distinctions are considered more briefly, and are also rejected. Ramsey concludes that the practice of distinguishing between particulars and universals is a mistake. I am not, however, persuaded that the distinctions which he discusses are those that are fundamental. If he is right, his theory is of very great importance. I cannot refute it, but do not feel persuaded of its truth—still less of its untruth.

The book contains a long essay on Truth and Probability, which is, to my mind, less valuable than most of the other essays. Ramsey attempts to identify probability with degrees of partial belief, but this is unsatisfactory for reasons of which he himself later became aware. (See his paper of 1929, "Probability and Partial Belief," pp. 256–7.)

The collection of "Last Papers," dated 1929, consists of notes not intended for publication. They contain brief discussions of many important topics, but are very difficult for a reader who was not in close personal contact with him at the time, owing to their compression and to a non-existent context which is taken for granted, as is natural in such notes. It is infinitely to be regretted that Ramsey did not live to work out fully, for example, the theories of induction and causality contained in these notes.

Ramsey's intellect possessed extraordinary clarity, even in dealing with the most difficult subjects. In all his finished work he expressed himself with perfect lucidity, and avoided the confusions of thought to which other writers are liable. It is possible that his love of lucidity sometimes led him to accept theories which solved difficulties too easily; perhaps his doctrine of extensional functions is an example of this. He had a certain pragmatist tendency which grew stronger as he grew older, and he did not like theories that made technical difficulties in the working out of mathematical logic. However that may be, he had undoubtedly an intellect of the first order. Even in his short life he achieved work of great importance, and what he might have accomplished if he had lived is incalculable.

BERTRAND RUSSELL.

Studies in the Problem of Relations. Lectures delivered before the Philosophical Union, University of California, 1930. (University of California Press, Berkeley, California. 1930. Pp. 217. Price $3.)

This is the thirteenth volume of studies in philosophy issued by the staff of the University of California, and fully maintains the interest of the earlier volumes. Some of the papers are technical. Mr. Mackay opens with an historical sketch, showing how the problem of relations becomes transformed as the assumption that the world is a set of substances with their own intrinsic qualities is gradually departed from. Closely related to this paper is that of Mr. Mahrenke, on "The Reality of Relations," which deals with the modern English discussions from Bradley onwards, criticizing especially Mr. Johnson's attempt to interpret relations in the light of qualities. Special aspects of the general problem are taken up by Mr. Lenzen, in his paper on "The Nature of Geometrical Relations," which stresses the part played by ideal construction in building up the concept of space, and Mr. Prall, "On Implication," which endeavours to show that a purely factual account of experience is sufficient to account for all implication whatever.

The remaining three papers are concerned with the problem of categories. Experience shows a material ordered or organized in certain general dominant patterns; whence do these dominant patterns spring, and what is the justification for their use in relation to the material organized by them? Mr. Pepper, in his paper on "Categories," discusses this question with reference to the views of C. I. Lewis, in his book on *Mind and the World Order*. His own view is that categories are simply wide general hypotheses resulting from our partial intuitions of the nature of the real, which have to be tested by their success in ordering the material of experience. The remaining two papers, by Mr. Loewenberg and Mr. Adams, will be found of most interest to the general reader, dealing as they do with the wider philosophical bearings of the whole problem.

The title of Professor Loewenberg's paper is "The Question of Priority." What, he asks, is to be taken in experience as primitive, and what as derived? He notes that apart from the adoption of some general point of view, the question is meaningless. Particular bits of experience do not bear any order in relation to one another. Primacy is a character of order which contents possess only when taken in a particular context from a particular point of view, and there are various points of view from which they can be so taken. Any particular content, then, may be prior in one scheme and posterior in another. He notes three main points of view which lead to different orders of priority: that of genesis in space and time; that of order of discovery for the experiencing subject; and that of logical priority for rational discourse. The first scheme seeks ultimate causes in space and time; the second seeks the ultimate data of experience; the third seeks the ultimate certainties of reason. If now any one of these schemes be taken as the ultimate dominating one, the remaining two easily take their places as subordinate. Naturalism, idealism, and rationalism are thus seen to be the results of assuming the priority in the universe of causal genesis, the knowing subject, and principles of demonstration respectively.

The question then arises as to whether any one of these schemes can be demonstrated to be prior to the others. Mr. Loewenberg concludes that this cannot be done. If you adopt any one of them, you can from the standpoint adopted prove the other two to be subordinate; but as each can show itself thus capable of proving its priority over the other two, the question of which is the real victor is not to be settled by this test. This difficulty the author

describes (borrowing from Perry's term "the ego-centric predicament") as the concentric predicament. The adoption of any one of these points of view sets you within a circle from which you cannot escape, for as you seek to escape, the circle widens to include the whole universe. Each circle can be described in terms of the predicament characteristic of itself. Thus naturalism can be said to rest on the archæo-centric predicament (nothing escapes the order of earlier and later); idealism in general on the psycho-centric predicament (nothing can be found which is not experienced by a mind); rationalism on the logo-centric predicament (nothing can be established which is irrational).

Is there then any means of adopting a wider point of view than any of these? Or are we committed to the conclusion that since all are on an equal footing, we are free to choose among them as suits ourselves?

It is characteristic of his general outlook that Mr. Loewenberg takes the logo-centric predicament as the most important. You cannot escape the effort to think; and if you are to think, you must think rationally. Neither naturalism nor idealism endeavours to avoid this. Both, then, by their effort to justify themselves philosophically, admit the supremacy of logical principles.

But granting that thought must be rational, are we forced to conclude that reality must conform to the principles of reason? And even if so, are we entitled to go further and say that the clue to the ultimately real entities is to be found in the entities with which reason operates? Mr. Loewenberg thinks not. He distinguishes between methodological rationalism and metaphysical rationalism, accepting the one but rejecting the other. If we are to think, we must do so rationally; but it does not follow that the nature with which we invest the real in our thinking about it necessarily belongs to the real, or that the real cannot have any other nature. The fact that there are divergent and competing efforts to think the real implies that we assume a real with its own intrinsic nature: thus philosophic method is necessarily rational, but philosophic controversy shows how short rationality as we understand it falls as a clue to the real. Behind all the divergent points of view, arising out of their very existence, we have then this inescapable postulate that there is a real with an intrinsic nature hard for human thinking to come at. Once we see this, there is no getting away from it. It constitutes a predicament which the author takes as the most ultimate, viz. the cosmo-centric. To accept this predicament is to escape the narrowness of the other three, while recognizing the value of their points of view. "They are mutually exclusive only in relation to each other, but when seen in relation to substance, they are parallel schemes of interpretation, parallel human solutions of the same ultimate problem" (66). Philosophies are theories about substance, not themselves substantial. Mr. Loewenberg describes his view as that of problematic realism. All theories are experiments or hypotheses, to be judged by their fruitfulness, "by pragmatic norms or tests, the coerciveness of which are the limits of human consistency and satisfaction" (69). Pragmatism falls short because of its omission of the doctrine of intrinsically qualitied substance; metaphysical rationalism because of its over-great confidence. Mr. Loewenberg combines the chastened tentativeness of the one with the dialectical method of the other, accepting as his final label that of Dialectical Pragmatism.

The paper by Professor Adams, on "The Relation between Form and Process," can be regarded as a discussion of the deeper implications of the situation disclosed by Mr. Loewenberg. Mr. Adams widens the issue by dwelling on the interplay between form and content in our organization of experience, showing the many diverse ways in which different forms can be applied to the same stuff or matter, each claiming to dominate it. We have not merely the various points of view in philosophy, to which Mr. Loewenberg in

his discussion confines himself, but the various worlds of "science, of religion, of art, of economics, the worlds of common sense, of description, of appreciation" (201), generated by our dominant, major interests. "A characteristic attitude or interest sweeps within its own defining form the given material of our experience. The net which each one of these basic organizing experiences throws out is wide and comprehensive enough to catch within it everything with which we meet" (201). And within each world we have a situation similar to that described by Mr. Loewenberg within philosophy, where "the given" is insufficient to constrain our choice of a particular alternative point of view (204–5).

How then are we to deal with the situation thus fully disclosed? Mr. Adams seeks light in a study of the relation between forms of organization and the material to which such principles are applied. Are principles of organization impressed from outside on a given material which in itself contains no trace of them, or are they found embedded in the given, and merely extracted and so made explicit? Neither view is finally satisfactory. For Mr. Adams it is necessary to regard them as both expressing the nature of the given and as organizing, completing, and enriching the given (206). He illustrates this kind of relation by reference to purposive activity and to the nature of language symbols. In both cases what receives form is not inert, passive stuff, but processes. In the case of purposive activity in general, it is interests, desires, impulses, conations, which are the material modified, enriched, transformed by the purpose which organizes them; in the case of the particular purposive activity which is the use of language, it is "moving and living processes, whether of behaviour or of thought" which form the material. A language symbol is the instrument whereby such processes are "clarified, organized, and literally rendered articulate, *i.e.* appearing as a jointed, relational structure" (215). And Mr. Adams generalizes this, concluding that in every case where form expresses and articulates, the material so expressed consists of processes rather than of static stuff. Hence the title of his paper, "the relation between form and process," rather than between form and matter. It is clear that this is a very important modification of the whole problem of categories, full of consequences for metaphysics if it can be sustained; and it is to be hoped that Mr. Adams will develop these consequences in further studies. The questions he has raised in this paper are central, and the line he takes is extremely suggestive.

L. J. Russell.

The Revelation of Deity. By J. E. Turner, M.A., Ph.D. (London: Allen and Unwin Ltd. 1931. Pp. 223. Price 8s. 6d. net.)

Dr. Turner is already well known as the author of several important writings, and in this fresh volume he continues the development of his argument in favour of Christian theism. The neo-Hegelian influence is patent, though Dr. Turner manages to refer to the very latest developments in scientific theory and to claim support from them. While in view of the uncertainty manifested in the citadels of science and the need of careful elucidation of the significance of scientific theories, any such claim seems somewhat premature, yet there is no doubt that Dr. Turner's argument and his presentation of it are as able and as impressive as are ever likely to be given on the basis of that general philosophical position which he accepts. The terms with which metaphysics is concerned are notoriously vague and lacking in exact analysis; and unfortunately much of the present theory seems merely to avail itself

of this feature to make terms as elastic as is necessary to suit its purpose. The frequent indulgence in the paradoxical, so familiar a pastime in English philosophy from Bradley to contemporary times, rests on nothing more profound than a confusion in the meaning of terms like identity, difference, sameness, distinction, and so on. The same vagueness renders possible frequent assertions such as "life should be regarded in its entirety," "the self must be understood in the fuller significance of the term," "the profounder meaning of the term ethical must be sought," or "the term person must be used in its highest possible sense," all of which carry the assumption of ultimate insight and finality in definition and cut the ground from under the feet of the critical opponent. Dr. Turner is essentially constructive, not critical; in fact, he is almost painfully uncritical.

If the nature of Deity is not simply to remain incomprehensible, man can and must have a knowledge, though not exhaustive knowledge, of the *perfect*. By the use of analogy it is possible, Dr. Turner thinks, to gain some degree of knowledge of the attributes of Deity, and he proceeds to treat of those degrees which depend upon the degrees in which Deity is revealed in the different aspects of existence—in mechanism, art, morality, and selfhood. Such a treatment is dominated by the idea of perfection, and hence this idea requires defence. The initial arguments in favour of such an idea are by no means convincing. Objection is taken to Professor Boodin's view that "infinite perfectibility is an eighteenth-century dogma" on the ground that this implies the relativity of truth to the age to which it chances to belong, and also on the ground that it is fundamental to Hegelianism. But Professor Boodin did not call it a truth, and thus raised no question about the relativity of truth, while the presence of the idea of perfection in Hegelianism is surely not a guarantee of its truth, but merely raises the question how it came to be there. Dr. Turner himself defends a knowledge of the perfect on logical grounds which are familiar but not cogent. "Imperfect" is a negative term, and implies and rests upon some notion of perfection. "It is plainly impossible to describe an object as 'not square' or 'not round' unless we already know, more or less definitely, what roundness or squareness actually are." This may be admitted with regard to definite and specific qualities. But the transition from this to a term like perfection, and especially perfection as applied to a Divine Being or to Reality, involves a step which renders the logical argument useless. The term "perfect" is no doubt used in everyday life, but always with reference to some specific point. The engineer formulates a conception of a perfect engine, but his conception refers to the equivalence of work performed with energy consumed. And, apart from some such specific reference, is it possible to formulate any definite, precise, and universally accepted idea of a *perfect* motor car, a *perfect* plant, a *perfect* animal, a *perfect* society, and finally a *perfect* self or personality?

The difficulties connected with this idea of perfection appear throughout the argument. In what sense was Napoleon the Emperor of a "higher status" than Napoleon the little corporal? In what sense was the former "more fully developed" and a "more true self" than the latter? In what sense did the life of the former manifest the "completest expression" of his character? Dr. Turner's attempt to illustrate the point that, as development reaches higher levels the *greater is the degree* of precision required, by reference to *colossal* frauds is not very fortunate. The prevalent habit of drawing analogies and illustrations for metaphysical purposes from social and human affairs which are incompletely analysed, if analysed at all, leads to simple confusion of ideas. And this confusion is intensified by the somewhat uncritical adoption of the idea of development; whether the latter is to be understood in the

sense in which biology tries to use it or the sense in which the Hegelian dialectic used it, is not clear. That the very nature of life and consciousness *demands* incessant development is not an obvious truth; nor is it any more so that development is inevitable and interminable. There is here collected an assortment of ideas that will not cohere, and yet out of this assortment Dr. Turner seeks to develop his most important doctrine—that of the Divine Incarnation.

If the will is essentially the self, and is, as he says, capable of interminable evolution, the self tends to become ever more perfect. If this is so, and if such development is possible, human beings will "become as gods," and is not the attempt to become so the sin for which man was punished? At the same time Dr. Turner will have it that such development is not possible, for selves are for ever condemned to "the Sisyphean doom of eternal failure, yet eternal toil." He cannot have it both ways. That every attempt to achieve these impossible ideals must elevate selfhood is a poor theoretical substitute. It is on this failure of man that the doctrine of the Incarnation is based. Man's failure vitiates his personality and demands from him compensation. This impulse to compensation is inherent in man, and is the more fully expressed the more fully developed the self. Deity as the highest self will manifest this desire in the highest and intensest form. But the effort at compensation on man's part is never adequate; it is only in the Divine Incarnation that is found the adequate compensation for man's violation of the divine ideal and at the same time the vindication and actualising of that ideal. Even if it is any more legitimate to extend ethical terms in order to interpret the universe than to extend physical terms for the same purpose, yet Dr. Turner here takes, without examination, a principle apart from all the concrete circumstances which qualify it and give it significance in human affairs and applies it absolutely. In what sense the Divine Incarnation on Dr. Turner's theory *compensates* for man's failure it is difficult to see, for he does not even say that man is enabled through the Divine Incarnation to become perfect; and after all the ideal is to become a perfect self. Nor is it clear in what sense man violates the divine ideal; for all ideals, according to Dr. Turner, are the expression of ultimate reality, and does not man's failure raise a problem about ultimate reality?

All these difficulties are traceable to ambiguities in terms and through them to a general and fundamental defect in the approach to the problem with a consequent weakness in the argument by analogy—a weakness that was well brought out by Hume in his *Dialogues on Natural Religion.* The argument by analogy assumes continuity between the finite and the infinite (for which the term "perfect" is used by Dr. Turner as a more satisfactory substitute). The various forms in which Deity is revealed form an ascending series, each being a more adequate revelation, and the series culminating in the Incarnation. This means that a perfect or infinite self is the final member of a continuous series. This assumption is at the least questionable; and if so, the argument by analogy is weak. Even in a series there may occur critical points at which what was before valid ceases to be so; and the transitional point from the finite or imperfect to the infinite or perfect may be such a critical point, all conclusions from analogy being rendered void. If, on the other hand, the perfect self is the final member of the series, there is then no reason to hold that there is *interminable* evolution. That Dr. Turner holds to this is due to the fact that the conception of infinity or perfection is vague and confused.

B. M. Laing.

Personality and Reason. By ROBERTA CRUTCHER, M.A., Ph.D. With a Preface by PROFESSOR H. WILDON CARR. (London: The Favil Press, 1931. Pp. ix+178. Price 8s. 6d.)

In his Preface to this book Professor Wildon Carr observed that the author disclaims any originality for her thesis, but that in the reason which led her to undertake the work there was "originality of a very high order." Dr. Roberta Crutcher was interested in problems of social "adjustment and maladjustment" which she felt could not be satisfactorily dealt with, without clear understanding of the essential reality involved, namely personality. This conception of the undertaking might well have resulted in a study based directly on personal experience in her field of practical interest. But the impression given by the book does not suggest this type of investigation. Such a study following the philosophical method of observing persons in their whole activity in actual life as distinguished from the psychological laboratory analysis would be of great value. Perhaps Dr. Crutcher will attempt it later, after this first attack which appears to be based mainly on reflection on philosophic theories, and maintains an eclectic view of a highly abstract character.

As might be expected, the influence of Professor Carr's philosophy is obvious. But it is no severe criticism to say that positions, which even in his argument, the outcome of many years of arduous speculation, are not always easy to harmonize, may seem lacking in perfect consistency when a young thinker attempts to formulate them in her own way. This affects especially the combination of the Leibnizian Monadology and the Bergsonian doctrine of the *élan de vie*. Dr. Crutcher originally elaborates a doctrine of persons in which she seems to be following Leibniz with some closeness. According to this view reality is wholly spiritual or mental in character. All reality is activity. But not all reality is personal. With Leibniz she holds that there is a hierarchy of real beings, and only to the higher type, in which self-consciousness and rationality are found can personality be attributed. Person is defined as "a rational being essentially active in its nature," and an "integrated whole." The marked rationalism of her view is singularly emphasized in the final chapter, in which she tries to relate her doctrine to the Hegelian concept of the concrete universal, and whilst rejecting the notion of the all-inclusive mind, claims that Personality, like Hegel's "notion," possesses the "moments," of universality, particularity, and the overcoming of this opposition in individuality.

Nevertheless she assumes that there is no difficulty in attaching to this theory the conception of creative evolution. "Life is the principle of reality; the forms of life are real existents. They possess within themselves the creative force" (p. 47).

But the total ignoring of a difficulty which Dr. Carr treated with his remarkable subtlety leaves some sense of confusion in the readers' mind. Dr. Crutcher's view involves complete epistemological idealism. There is no independent material world. The person "opposes itself to itself"—there is no "other" (p. 167). Where then is the place for creative evolution? Let us assume that it is a form of spirituality. What place has it in the spiritual world with its blind irrational productivity of life forms? Dr. Crutcher struggles to get rid of the irrationality by a curious un-Bergsonian personification of the life-force. "Life had chosen this type of being" (persons) for its highest manifestation.

But surely we have in the *élan vital* a law of process which has nothing to do with the spiritual reality, and could never have been brought forth by mind

even as phenomenal of such a reality, but for the experience of an other-than-mind which certainly does not function in accordance with logical principles, and for which time as duration is not phenomenal but ultimate reality. The two philosophies, in fact, belong to wholly different world-views.

It is in the markedly rationalistic theories of the nature of the person as thinking and willing, the relation of the theoretic and practical activities, the nature of freedom and value, that the standpoint appears remote from experience of life. "The difference between thought and will-activity is not very great. The difference can be determined by noting that something results, something happens" (p. 96). Certainly. But the whole problem of the distinction between the mere event of nature (in which also "something happens") and the practical act of an originating being or principle remains obscure. If "pure thought, volitional thought, and volition" differ only as stages, the distinctions being arbitrary, how is it that "no one by taking thought can add one cubit to his stature," or that no intensity of thought will bring about an alteration in nature unless we abandon the contemplative attitude of cognition and pass to the practical attitude of the historic world of persons? Again, activity constitutes willing, and affection or desire is not anything distinct from will. No blind impulse or desire must be admitted. St. Paul's view of the dualistic conflict is rejected because in Dr. Crutcher's opinion there cannot be "any alien thing in a person enabling him to act against his own reason." But the experience to which St. Paul refers is left wholly unexplained. "To say that a person's will broke away from his reason and forced him to commit a murder does not give us the real explanation of his conduct." But it attempts an explanation, as Dr. Crutcher's argument does not. Will and reason it appears must always work in conjunction. Further experience of "maladjustments" will probably suggest to the author some view more on St. Paul's lines than her present *a priori* doctrine. In the account of the growth of the values Dr. Crutcher seems to abandon her idealistic standpoint and follow a modified hedonistic argument. We judge acts to be good because they bring about satisfaction of our interests in some way. Further, ethical value, which in this is typical of the other values, is brought under the notion of harmony, and the achievement of harmony among our desires. The difficulty which attends on all forms of the coherence theory of good is not avoided. The crucial question is not whether there is harmony in the different desires or activities, but *what* is it that is harmonized. The problem of the nature of value must re-emerge behind the harmony.

The references to historic theories show a good deal of knowledge, but are not always quite accurate. The identification of the true subject-self with Kant's " transcendental ego," and the object which represents the subject with his empirical ego, can hardly be accepted. The attempt to deify Bergson's *élan vital* as a striving, finite, incomplete God, seeking that which he has not, is also rather questionable, as well as the remarkable suggestion that this would fit in with the New Testament idea of the living God.

The book maintains the high standard of the Favil Press in the way in which it is got up.

H. D. Oakeley.

The Physiology of Beauty. By Arthur Sewell. With an Introduction by Lancelot Hogben. (London: Kegan Paul, Trench, Trübner & Co. 1931. Pp. xiv + 194. Price 8s. 6d. net.)

This book has a slightly misleading title. Its main business is a development of the principles of behaviourism, with an application of these to ethics and æsthetics. Actually the topic of æsthetics occupies rather less than one-half of the two hundred odd pages.

The work is difficult to review, both on account of its matter and of its manner. As for the matter, I suppose a convinced behaviourist can always take delight in some new lightening of the burthen of the world's mysteries by their reduction to a few symbols. For my own part I confess that the process appears to me to be barren and unconvincing, though I am prepared to agree that what Mr. Sewell sets out to do here he does well, playing his intellectual game with the minimum of counters and sticking to the rules. And he does raise in an interesting and often original way the fundamental issues of the theory of knowledge.

But Mr. Sewell's manner, at least in the earlier part of his book, is irritating. He is unnecessarily aggressive, and is sometimes offensive. He gets better as he settles down, but why should any serious writer (and Mr. Sewell is certainly serious) put down things like this: "Theology, then, is in the nature of things bound to be a sterile speculation because it is a discussion of the reference of a name" (p. 6)? Or (with condescending attention to Professor J. S. Haldane): "The practice of the scientist when he is in the laboratory is the legitimate practice; when he is in the pulpit preaching the Gifford Lectures, that practice is usually abandoned" (p. 44)? Or, "It is the fate of all professional critics that their investigatory reflexes (as well as their 'pugnacity' reflexes) are always so powerful that they inhibit all other sorts of response" (p. 42)? Or, on the first page, a poor joke like, "General Smuts, statesman as well as philosopher, has conceived a world of *better wholes*"? (The italics are mine: perhaps this joke was unintentional? But the title of one of the sections, "Dogs and Dogmas," makes me doubt it.)

Mr. Sewell, it will be inferred, is a scientist, and he has the support of Professor Lancelot Hogben, who writes an introduction, and who acknowledges that the use of the word 'public' in his own work is due to the suggestion of Mr. Sewell. Mr. Sewell's argument is not easy to summarize fairly, and I am not clear about the significance of some of his main contentions. The foundation is a distinction between the public and the private. Exalting observation, experiment, deduction, which is "far more significant than our verbal speculations on the nature of truth and life" (pp. 4–5), disowning philosophy, which for too long has been "merely plausible," dismissing the very name (and apparently, too, the concept (p. 9)) of 'reality' which has long deceived us with its "verbal magic and picturesque incantation," casting aside the antique antithesis between 'mind' and 'matter,' he comes with new hope to the work of Pavlov and his school. This work clearly implies that 'mind' and 'knowing' and other such 'mystical' concepts (Mr. Sewell, in common with the journalists, evidently believes 'mystical' and 'confused' mean the same thing) must give place to the notion of publicity, of which the conditioned reflex is the typical example. Publicity is (in a modification of James's phrase) *what truths have to take account of*. The public is described as the communicable, the private as the incommunicable, and the notion of a 'public' world is to be substituted for that of an 'external' world. It is, however, necessary not only to show this: it is necessary to define the limits of communication. Communication is defined by the operant elements in a conditioned stimulus, namely behaviour, and the particularities in the variations of behaviour which are distinguishable from all other particularities. The 'private' is the negation of all this; the private is *not* described or describable in bare terms of particularity of structure and behaviour. And the private is irrelevant in public discourse. "When we are making judgments we must surely confine ourselves to the public world" (p. 55). "Any data that are presented to us privately must be ignored as a fruitful source of error" (p. 56). "So consciousness is utterly private and must be ruled out of our discussion."

This is the main idea of the book. It is followed by a treatment of ethics and of æsthetics. Publicity and Privacy are of course the pivots upon which the discussion turns. If ethics is to be 'scientific,' the examination of its data must be 'public,' and 'private' assumptions may not enter in. In particular we must not assume an entity like the activity of the will (pp. 67 and 70), for the will is not behaviour and structure. The 'self,' too, goes by the board (pp. 76–78). So does freedom (pp. 103 *sqq.*). Goodness in the end is found to be private, and there can be no public guarantee of moral judgments. 'Good' is indefinable, not because it is a simple property of things, but because it is the name we give to a private and particular set of responses to a particular situation.

Into Mr. Sewell's treatment of beauty I have no space to go. There are public elements in æsthetic situations—the stimuli, the human organisms affected, and the spoken judgment—and these are of course just the elements which are of 'scientific' importance, and which make prediction possible in æsthetic matters.

Mr. Sewell, it seems to me, has studied æsthetics as he has not studied ethics, and possesses a penetration here which is absent in the other. And he is ready to admit that in the sphere of æsthetics there is need for humility and caution. On the other hand, his insight is revealed mainly in *obiter dicta*, which seem to be largely independent of the main dogma with which one wishes Mr. Sewell were not so blindly in love. But this brings me to my comments. I must confine myself to two main headings.

The most obvious objection which can be made is, in my view, also the final one. It is, simply, that if in your desire to be 'scientific' you begin by ignoring part of the data to be investigated, your result cannot be other than a rickety and distorted skeleton of the truth. If this is 'science' (and I do not suppose it is) let us turn back to despised philosophy, which, whatever its faults, does not beg its questions in this particular way. Let us be honest, and, whatever our theories, admit that introspection in *some* sense is a fact, and that its data, sensing, feeling, striving, and the rest, are, though 'private,' just as good data as 'public' behaviour patterns, and that they may perfectly well be discriminated by competent observers. And if we can admit this fact each of ourselves, we shall be able to extend it, through sympathy and the 'public' medium of language, to other beings like ourselves, and we shall at least not be absolutely precluded from extending beyond these limits, though tentatively and with caution. We shall certainly be able to allow ourselves to see all the facts, and to judge just what sort of accuracy is possible in regard to them. Surely this is only, as Aristotle, the Father of science, said long ago, "the mark of an educated man." In particular, we shall not be compelled beforehand to decide, theory-ridden, that "if there are wholes . . . we cannot regard them . . . as other than mechanical." We shall not be compelled to empty the moral life of what all serious ethical thinkers (the utilitarians being possible exceptions) have regarded as an essential part of it, its inwardness, before offering our 'scientific' explanation. The good will may not be the whole story of morality, but the fact that morality has its external side is no ground for the monstrous suggestion that it has no other side. The merely external approach takes us nowhere. When Mr. Sewell rather naïvely writes (p. 101): "No amount of talk will then bring us any nearer to the true nature of goodness," we feel that he has hit one of his own coffin-nails hard on its head. It is the greatest pity that the important positive work of Pavlov should become tainted by association with such half-baked philosophy.

But if the mistaken 'science' which denies the facts at the outset is, as it seems to me, without excuse or justification, Mr. Sewell's contentions about

publicity are interesting and raise important metaphysical issues. It would be foolish to dogmatize on these, and I can only in a sentence or two express my own perplexities.

I am not quite clear why 'publicity' is a sounder term than 'externality.' It is partly, I suppose, because the 'public' is opposed to the 'private,' and the 'private' is 'incommunicable.' But *is* the private incommunicable? In a sense, yes; the pain in my finger is mine alone. But through language and other behaviour, to put it at nothing more, communication in *some* sense is possible, and it is communication of the private, admittedly through a 'public' medium. Again, as the private is not wholly incommunicable, is the public strictly 'communicable' at all? Is it not the only thing *not* communicable, being what I have called the *medium* of private communication which is *there*. And if the 'communication' difference between public and private goes, why 'public' rather than 'external,' or, perhaps better, 'independent'? I cannot see that the notion of publicity offers us anything better than the realistic idea that knowing is the apprehension in perspective of a world independent of the knowing. The idea of privacy is certainly important (and it is distinct from that of subjectivity). And privacy I should say is a characteristic of *all* the perspectives of the independent world which we apprehend, not only of our sensations, feelings, desires, and willings, but just as much of 'behaviour-patterns' themselves. It is impossible to capture 'publicity' in the simple way that behaviourists desire. We may apprehend the independent world, but we do so in terms of private perspectives, and our true 'perspective' of the independent world is only arrived at by means of laborious constructions. Even then it is a perspective, if a true one. No amount of reasoning can argue away privacy, and without the unique datum of ('private') knowing, even the behaviour-pattern which is arguing has no significance and no existence.

LOUIS ARNAUD REID.

Textbook of Logic. By A. WOLF, M.A., D.Litt. (London: George Allen & Unwin Ltd. 1930. Pp. 407. Price 10s.)

Professor Wolf has written this book, as the title suggests, not as a contribution to the philosophy of logic, but as a guide to students who have to learn—and to be examined in—the elements of the subject. And for this purpose his *Textbook of Logic* should be of real value. He presents what may be called the orthodoxies of logic with clarity, crispness, and a lot of good sense; and he has wisely put himself to the trouble of selecting a wealth of examples which shall seem to the beginner to be real and not "cooked," as the stock examples of implications and scientific methods so often appear to be. I think I am right in saying that the mortality of Socrates is not alluded to by Professor Wolf once in the book.

After a brief introduction, in which he gives a clear and stimulating account of the general nature of the subject-matter with which Logic deals, the author divides his book into one section on Formal Logic and another on Inductive Logic. At the end of the book he provides an interesting and well-selected collection of problems and exercises for the use of students.

In the section on Formal Logic Professor Wolf concentrates mainly on the traditional doctrines of Immediate and Syllogistic Inference, Hypothetical and Alternative (or Disjunctive) Propositions and Inference. He does, however, devote some half a dozen pages to mediate inferences which are non-syllogistic, which he describes as Mediate Inferences with a Singular Middle Term. He shows how mediate inferences can be drawn based on transitive relations, but does not venture to give a full classification of types of relation. It seems

to me that Professor Wolf would perform a real service to students if in future editions of his *Textbook* he would enlarge considerably this chapter, and thus set their feet upon a path which, if followed up, would lead them to see what modern Formal Logic is doing, and so to see by contrast and comparison what was the special function of Aristotelian Formal Logic.

If Professor Wolf sees his way to doing this, perhaps he will also consider two minor criticisms: (1) Is it not misleading to use the symbols S, M, and P in inferences where the relations are *not* those of Subject and Predicate, *e.g.* in S = P, M = P ∴ S = M; or M is the brother of P, S is the son of M, ∴ S is the nephew of P? (2) Is not the suggestion on pp. 84–85 false and pedagogically dangerous that relations which are *not* those of identity and difference can "with a little ingenuity . . . be expressed in terms of identity"?

There is nothing special to be commented on in the treatment of the syllogism. "Barbara" is left out, which may be wise; more disputable is the omission of any discussion of the question (which usually disquiets interested beginners in Logic) whether or not every syllogism is a *petitio principii*.

In his treatment of hypotheticals, the odd fact that the contradictory of a hypothetical proposition is (apparently) different in *form* from the proposition it contradicts is brought out in examples, but not adverted to in discussion. And the intelligent student will demand more proof that particular hypothetical propositions are all bogus.

It is not the fault of Professor Wolf that when we reach the lengthier division on Induction we feel at once that we are in a new and a foggier atmosphere. Whereas in Formal Logic the subject has the merit of being both as abstract as possible and nearly as definite as possible, in Inductive Logic—which should, pehaps, be called Informal Logic—we find ourselves in a region where general recommendations and sensible prescriptions take the place of universal rules. For example, in scientific procedure analogy, we are told, is "very helpful," but (as Professor Wolf very properly points out) it "establishes nothing." There is no "proof by analogy." "Care is obviously necessary" in the employment of methods of classification. In describing the Method of Agreement the author says, truly enough, that "no scientific, or other, method is fool-proof," and "even in spite of the most scrupulous caution mistakes are easily committed."

However, as a descriptive account of the various kinds of scientific procedure is officially regarded as a part of Logic, Professor Wolf is perfectly justified, and, indeed, compelled to deal at length with the subject in his *Textbook*. Nor do I know of any other treatment of the subject at once so full, so brief, and so interesting. I expect that the students who use this book will regard this as easily the most valuable and instructive part of the subject. And if their interest carries them to the length of seriously studying the chapters on the Statistical Method and Probability, they will gain a lot from the author's sensible and clear presentation of the elements of these subjects.

Teachers will find the exercises at the end of the book useful and original. The Select List of Books recommended seems a little exiguous.

G. RYLE.

Critique of Physics. By L. L. WHYTE. (London: Kegan Paul, Trench, Trübner & Co., Ltd. 1931. Pp. xii+196. Price 10s. 6d.)

Mr. Whyte believes that "the methods of relativistic macroscopic field theory and of general quantum theory have already exhausted the fundamental problems for which they are appropriate . . ., and that new methods are necessary." He sets out to discuss what the new methods are to be. Since he

is a trained physicist, and his outlook is always physical rather than philosophical, a full examination of his thesis would involve considerations too technical for this journal. But perhaps I may try to suggest to readers with little specialized knowledge why his essay does not seem to me very important.

In the first place, it may be doubted whether it is ever possible to forecast an advance in science, which is anything more than an application and elaboration of accepted ideas. The introduction of a new and relevant idea is as little predictable as the advent of a new artistic form. However, Mr. Whyte would dissent from this view. He starts from a remark by Heisenberg that the last two great advances in physics, relativity and quantum theory, have a common feature. Both explain the existence of a "universal constant" (the velocity of light and Planck's constant) by denying assumptions implicit in all previous thought on the subject, the assumptions, namely, that it is possible to determine the simultaneity of distant events, and to observe a system without changing it. He argues that this feature must be found in the next great theory.

This is simply a bad "induction," based on the crudest use of the unsupported "Method of Agreement." Moreover, the theories on which it is based have a positive as well as a negative aspect; it is just as important to decide what the new theory will assert as what it will deny. Here Heisenberg's suggestion does not help at all. If it had been made thirty years ago, it would not have helped Minkowski to produce his geometrical interpretation of the Lorentz transformation, or have indicated that the solution of the antinomy of waves and particles was to be found in a fusion of the incomplete and mutually conflicting ideas of de Broglie, Heisenberg, and Schrödinger.

The position would be different if Mr. Whyte were seeking support for some theory, at present in a rudimentary stage; then a similarity to existing theories would have some evidential value. But he is not; he explains at great length the features that the new theory must have, but he does not produce any theory, having those features, which satisfies the first test that any satisfactory theory must pass, namely, that it explains something previously unexplained. It would be different again if Mr. Whyte, like the builders of Utopias, used prophecy as an instrument for analysing our present discontents. But again he does not; in spite of the title of his work, his analysis of the present position is sketchy and superficial. His work abounds with such terms as "arbitrary number," which clearly imply assumptions no less dubitable than those that he proposes so lightly to reject. Yet he never seems to realize that they do imply these assumptions, still less than the assumptions require examination.

In fact, Mr. Whyte seems to me to have misconceived his problem. The weakness of physical theory at the present time is not that it leaves unexplained some things that it obviously ought to explain—such as the connection between universal constants that causes Mr. Whyte so much concern. No theory is ever complete; and the work of Eddington in this direction, though not successful so far, is clearly on the right lines. In so far as the aim of a theory is to provide fundamental propositions from which laws can be deduced, our present theories are highly satisfactory. Their defects appear when attempts are made to give meaning to them, and especially a meaning derived, however remotely, from the world of common sense in which all science has its origin. So far it has proved impossible to give quantum theory a meaning of this kind that does not deprive relativity of a meaning, and even to state either of them in terms the meaning of which is not denied by the propositions they are used to formulate. The examination of these contradictions must be the first task of any adequate "Critique of Physics." The work is engaging the

attention of many investigators, including the Copenhagen school. To them, rather than to Mr. Whyte, we shall look for the next great step in the progress of physics.

NORMAN R. CAMPBELL.

The Works of Aristotle: *De Anima*. Translated by J. A. SMITH, M.A., LL.D. (Oxford: Clarendon Press. 1931. Pp. 46. Price 10s.)

There is a special interest about this work for two reasons. In the first place, it is the final volume of the Oxford Translations of Aristotle which were begun nearly a quarter of a century ago. Both the editor and the publishers of the series deserve the congratulations of the whole philosophical world on the completion of this great work of scholarship. The second reason is more personal. Those who know the long and profound study that Professor Smith has devoted to this particular work will rejoice that at least this much of its results has been given to the world. They will hope that we may yet see the definitive edition of the work from the same hand.

There are few, if any, who would be competent to argue with Professor Smith on points of scholarship and interpretation. From the point of view of a reader, one can only say that this work vies with the very best of the series in the success with which it conveys the meaning of Aristotle in another language. Professor Smith seems to have attained an almost perfect harmony between the claim of intelligibility in English and faithfulness to the original Greek.

Of course, no two people would be found to use exactly the same English word to express the meaning of the original in every single case. If I might venture on one or two suggestions, I should question whether "the animal-itself" (404. *b.* 20) is quite satisfactory for *αὐτὸ τὸ ζῶον*. It is better than Hicks's "self-animal" or Archer-Hinde's "ideal animal." But why "animal" at all? I should have thought a more general term like "living being" would correspond more closely to the Greek. Again, in 412. *a.* 13 it seems to me that "principles" in English has lost its original implication of beginning too completely to be quite a satisfactory translation of *ἀρχαὶ*. Would "originals" be clearer? Or again (429. *b.* 6), "man of science" in modern English has acquired a considerably more specialized and limited meaning than *ἐπιστήμων* ever had in Greek, though it is certainly preferable to Hicks's "scholar." The same word is translated "knower" in earlier passages, and it is not clear why this is abandoned here.

These, however, are mere trifles, and do nothing to detract from the admiration that all must feel for such a skilful and valuable piece of translation.

G. C. FIELD.

Philosophy of the Unconscious. By EDUARD VON HARTMANN. With a Preface by C. K. Ogden. (New Edition in one vol.) (London: Kegan Paul, Trench, Trübner & Co., Ltd. 1931. Pp. xxxviii + 372 + 368 + 368. Price 15s. net.)

Die Philosophie des Unbewussten, by Eduard von Hartmann, was originally translated in 1884 from the German of the ninth edition into English in three volumes, and to those interested it is known in that form. A new edition in one volume is now offered to the public. It is, of course, more convenient to have it so, and the readability of the type is in no way affected. Whether

Hartmann is or has been much read in England is questionable. This edition may serve to create interest in him if it has not existed, revive it if it has waned, or intensify it if it exists. The main reason of the editors for republishing it in its English form is that the original edition is out of print and that the work is of considerable importance historically and theoretically in relation to contemporary psychology. This is the point which Mr. C. K. Ogden emphasizes in a short but instructive preface, and it is appropriate that the task of a new edition should be undertaken by the International Library of Psychology.

The work is Hartmann's first one, and he was a prolific writer. It attracted very great attention, much to the surprise, if also much to the satisfaction, of the author himself. In 1904 it reached its eleventh edition. This is an historical fact which is itself of psychological interest. It remained the most influential of all his works, and continued to exert an influence until Nietzsche put it in the background through his attack on pessimism and his propagation of the doctrine of joy in life and exultation in its creative power. Though Hartmann cannot be regarded as being a first-hand investigator in physiology and biology, he was a keen student of the work done in these fields, and the present work was written under the influence of these young but rapidly developing sciences. In this respect he agrees with Schopenhauer, Nietzsche, and even Bergson.

Though at first the interest in Hartmann's theory was focussed on the metaphysical significance of the principle of the Unconscious, its real purpose was to show how that principle is valuable in all spheres of human experience —for the solution of problems in the physical and mental domains as well as in the metaphysical. It is certainly an attempt to construct a comprehensive monistic system which is in opposition to the prevalent materialistic systems, and yet such as to reconcile the latter with idealism. Successive editions gave him the opportunity of elucidating his own views and of making clear his own historical position, which he states to be that of a synthesis of Hegelianism and Schopenhauerianism—two philosophical systems which are apparently antithetic, but which yet "have been fruitful and decisive for the mental life of Germany in the last two generations." The idea of synthesis carries with it a protest against being taken for a mere continuator of Schopenhauer and against the identification of his pessimism with that of the latter. The principle of the synthesis is the Unconscious, and the chief value of that principle lies in its alone rendering that synthesis possible.

The principle of the Unconscious is at the present time mainly of psychological interest, but whether it solves anything or whether it is philosophically and psychologically fruitful is doubtful. Hartmann is diffuse, and the present work is unnecessarily bulky; and even his gift of exposition—or his command of words?—does not render him successful in making the conception of the Unconscious logically clear and defensible. All the difficulties attaching to it in contemporary psychology are apparent in Hartmann. In juggling with terms like instinct and unconscious purposes he thinks he has attained to an insight and an understanding of obscure phenomena. Here are a few random but typical passages. "Undoubtedly the individual collaborators had either no idea at all of this concatenation, or possessed indeed only a highly defective knowledge of a limited number of their predecessors, and just as their profoundest principles welled up from the depths of the Unconscious, so instinctively did they themselves divine the truth in regard to the place which they had to occupy in the evolution, so that the modern historiography of Philosophy must be characterized as the *bringing to consciousness* of the *unconscious* relations obtaining between different philosophics (misprint?), in

consequence of which they unconsciously form a great development series" (Bk. II, p. 7). "How repugnant is the supposition of a mechanism which constrains to brood as soon as the temperature falls below a certain degree; how simple and clear the assumption of an unconscious purpose which compels the willing of the appropriate means, but of which process only the final term, as a will immediately preceding action, comes into consciousness!" (Bk. I, p. 84). Can either passage be said to throw light on the facts discussed? "Man instinctively seeks an individual of the other sex to gratify a physical impulse, in the illusory expectation of thereby attaining a higher enjoyment than from any other kind of gratification; his unconscious aim, therefore, is, in the main, procreation. Man instinctively seeks that individual of the other sex, whose nature blended with his own represents the type of the race in the most perfect way possible, in the vain hope of having an incomparably higher enjoyment. . . . His unconscious aim therein is the begetting of such an individual as most completely represents the Idea of the race" (Bk. I, p. 238). This is simply rambling fancy, but it illustrates a fallacy which is very frequently committed by psychoanalytic theory, and which consists in taking as an unconscious purpose what is either an important or else a collateral effect arising by way of purely natural causation from an act which is conscious enough.

B. M. LAING.

Vedānta, or The Science of Reality. By K. A. KRISHNASWAMY AIYAR, B.A., with a foreword by Dr. S. RADHAKRISHNAN. (Madras: Ganesh & Co. 1930. Pp. xviii + 346. Price Rs. 10.)

This book has an eulogistic foreword by Dr. Radhakrishnan. Its most important part is that which deals with the three states of Waking, Dream, and Sleep. It, however, raises a number of other issues. One of these is of primary importance, namely, what are the foundations of *Vedānta*? Dr. Radhakrishnan tells us that the author is an ardent advocate of Saṁkara, that is, of non-dualist *Vedānta*, which the author, as an adherent, claims to be the final and perfect system, though, to use his words, "it is often stigmatized as *Māyāvāda*, the theory of illusion, as a view that juggles one of one's common sense, and works the ruin of the human soul."

The *Vedānta*, as taught by the Master and as expounded to-day by his advocate, the author is not, however, the same thing. Saṁkara the Philosopher was also a man of religion, by tradition a worshipper of Shiva-Shakti, who believed that there were some truths beyond the mind and senses (*atīndriya*) for a knowledge of which Revelation was necessary, and in fact had been given by *Veda*, with its three divisions dealing with Ritual, Worship, and the Indian *Gnosis* or *Vedānta*. The first two divisions constituted a propaedeutic for the third. Accepting the authority of the Sacred Texts in all matters of supersensible truth, Saṁkara sought to co-ordinate and to interpret them, and then to show that they were in conformity with and supported by reason. The author uses the term *Vedānta* as meaning "the system of thought underlying" the Upanishads. Rather should we speak of the system of thought based on the Upanishads (Preface). Again, the author says (p. 27) that it must not be imagined that the *Vedānta* depends for its acceptability on the authority of the *Vedas*. This is an odd way of putting the matter, for the *Vedānta* is a portion of *Veda*, which includes both the four *Vedas* and the *Vedānta*. In short, Saṁkara was a scholastic philosopher. The author has, however, nothing to say as regards

Revelation as the source of supersensuous truth (p. 338). As Dr. Radhakrishnan says, the author's conclusions depend on logical argument and not textual authority, though now and then a text has been cited. The book is, in fact, an original attempt to do without Revelation (*Sruti*), and to distinguish *Vedānta* as the "Science of Reality" from what the author includes under the heading of Religion, Theology, and Mysticism.

Thus the author says that the *Vedānta* is to be distinguished from Ritualism (p. 282), yet at the same time he says (p. 23) that "the Vedānta has laid down rules for the regulation of rituals," although, he adds, "we cannot revive old conditions or the old faith." Vedānta, again, is not Theology (p. 282). What is the Sanskrit word which expresses what the author means by theology? "It must," he says, "be borne in mind that the Pure Science of *Vedānta* has absolutely nothing to do with rebirth, etc. (*sic*). Theories, however, have been propounded which have empirical value only" (p. 65). Yet we are also told (p. 69) that it is *Vedānta* which threatens evildoers with rebirth. The Vedānta, again, is said not to be Mysticism (pp. 117, 174), by which term the author means *Yoga*, though many Upanishads deal with that subject, and the author himself speaks at page 217 of "Vedānta in its psychic portion" dealing with the induction of trance (see also p. 116). At page 270 he says: "Vedānta teems with doctrines that are often fanciful and dogmatic, but they do not, indeed cannot, touch its central truth, which by its immediacy is ever secure."

The author has not made himself clear, but perhaps what he means to say is this: If one excludes Revelation, as he does, then it becomes necessary to examine each statement occurring in *Vedānta* as *Upanishad*, to see whether it is and how it is founded. There is, however, the author says, "a Central truth" which he regards as secure. What this central truth is is not stated definitely, but it includes the main subject of the book, namely, the Three States—Waking, Dreaming, Sleep. These are the common experience of all. Some matters may be corollaries of other established truths. Thus, Rebirth is the corollary of the metaphysical doctrine as to the *Ātman*. Other matters may be established by inference, or speculation, or may be mere dogmatism and fancy. Shall we call all these *Vedānta*? It is said that the *Vedānta* does not admit of speculation, yet the author speaks (p. 226) of the doctrine as to the evolution from unity to multiplicity as belonging to "the portion of Vedāntic speculation" which has reached its height in the concept of *Māyā*. Moreover, it appears that *Vedānta* has its "theories" (pp. 65, 66, 70, 330). According to the traditional view, the primary meaning of the term *Vedānta* is *Upanishad*, and what is in *Upanishad* is *Vedānta*.

The modernist author chides both those who "believe in the truth as a dogma, for it has the sanction of Vedic tradition" (p. 339), as also those "who follow the modern vogue, namely, to look upon all teachings from the historical point of view" (*ibid.*). The principle of *Vedānta* is indeed, he says, all-embracing, and he puts forward the conception of a universal religion, backed by the most perfect philosophy (p. 114). *Vedānta*, dealt with as he proposes, appeals to and concerns those who do not acknowledge the authority of the *Vedas* (p. 27). "*Vedānta* requires on the part of its followers no change of religious forms, which it leaves intact as a merely protective shell of truth" (p. 12).

Urged on by the spirit of the "strictest Monism" which seeks to engulf all differences, the author is led to make some strange observations on Christian theology. Thus, for example, we are told that "the story of Adam's fall is only a simplification for common minds of the profound metaphysical doctrine of the self-expression of Brahman" (p. 154). Again (p. 152), "to Buddha and

Saṁkara *Karma* and Rebirth are truths beyond dispute, while Jesus and Mahommed" ("who gave to the world simple theologies appealing more to the emotions of the common people than to the understanding of the enlightened") "do not allude to them at all." The solution which the author offers of this variance is given in these words (p. 104): "Christ has not referred to *Karma* and *Rebirth* probably because he has placed the highest truth before the world, namely, the Vedantic doctrine of the utter negation of all else than Pure Consciousness." Such an explanation is "not probable," but is the product of sheer fantasy.

There are three chapters which are an attempt to show the relation of ethics, eschatology, and æsthetics to the author's Central Truth. There is a strange omission to deal with the Indian concept of *Dharma*, which is one of the greatest concepts that India has produced. As regards eschatology, nothing is said of the *Panchagni Vidyā*. Æsthetics is disposed of in a short chapter of six pages, of which a portion treats of the *Mantra "Om."* It is to be desired, in the interest of the author's general position, that he had more fully and orderly developed his argument on these topics.

Reality is defined (p. 58) as that whose existence is undeniable, whose non-existence cannot be conceived or otherwise experienced. In this sense the pure consciousness of sleep is said to be reality *par excellence*. More accurately it may be said that such reality is Brahman as it is in itself (*Svarūpa*), of which the state of sleep is said to be the highest manifestation by reason of its being an experience free of the subject-object relation and one of unchequered bliss. The Sanskrit word which is translated by "consciousness" is *Chit*. There are two observations which should have been made for the benefit of the English reader. The English word Consciousness is only an approximate rendering of the Sanskrit word *Chit*. There is no word in any European language which is an exact rendering of *Chit*. Secondly, Unconsciousness in *Vedānta* is used in the sense that that to which it is attributed is the object of consciousness, and not that it is unconscious in itself.

As might have been expected, the author expresses himself to be unconcerned with the historical origin of the doctrine of *Māyā*. This term he variously renders as "appearance," "unreality." "non-being," "contradiction," "disguise," "mask," "dream," and "illusion," but the latter in a transcendental sense only (p. 90). The author, however, is of the opinion, held also by idealistic philosophers in the West, that there are degrees of reality, and that from the relative standpoint the reality of the world is not of the first, but of the second degree. Adopting undeniability as the criterion (for no experience which is actually present is unreal), the author claims to assign a place for every phase of life, with the result that, in his words, "unreality" has been "exorcised from life altogether." So free, however, is the author in the handling of his subject-matter, that he expresses his readiness to do without the doctrine of *Māyā*, for he says (pp. 169, 226, 334) that that doctrine as taught by Saṁkara is not vital to the system which exists independently on the basis of experience. Therefore those "are fruitlessly employed who spend their fury in demolishing it."

The substance of the book is a clever exposition of the author's views concerning the doctrine of the three states, of waking, dream, and sleep. Reduced to its smallest proportions, the author's contention is that Western philosophers have taken into consideration waking experience alone. Therefore their philosophy may thus be called a mono-basic one. But life must be taken as a whole, and the conclusions of *Vedānta* are thus grounded on the tri-basic experiences of waking, dream, and sleep. In the first two states experience is

still in the subject-object relation. In sleep there is an absence of such relation, and a state of bliss which is remembered subsequently on awakening. In sleep the individual is said to rest in the Brahman, and returns from thence on awakening to the world of duality. The author says (p. 63): "Every day he (man) finds himself resolved into pure consciousness in sleep, and he becomes then one with God Himself, who never deserts him because He is his inmost essence." More accurately we should say that (according to this Vedānta) man is in sleep in his Causal Body. He is one with that. It is not the individual causal body, but the collectivity of such individual bodies which is called Ishvara (God). The value of the author's exposition would have been greater if he had more fully dealt with other states of consciousness to which he makes allusion at page 106, and had also treated of the physiological side of the matter. The author has not made himself clear on the subject of what he considers to be the state of liberation.

After dealing with Scepticism, Idealism, Realism, Solipsism, Polytheism, and some Western objections to *Vedānta*, Chapters 20 to 24 deal with "Greek Speculation," "Modern Thought" (in particular Hegel), "British and American Thought," and the Italian idealists, Croce and Gentile. Of these topics the fullest account is that given of Hegel. "For a student of Western philosophy might remark that after all the *Vedānta* is only monistic idealism, and Hegel's absolute idealism is the last word in it." The author explains why this is not so. He is of the opinion that of all the speculative systems of the West, Gentile's as well as Croce's make the nearest approach to *Vedānta*. This portion of the book is valuable, particularly the polemic against Hegel.

JOHN WOODROFFE.

Sāmkhya, or The Theory of Reality. By J. N. MUKERJI, M.A. (Calcutta: S. N. Mukerji. Pp. xii + 102. Price 5s.)

The author, who is Assistant Professor of Philosophy at Morris College, Nagpore, endorses the statement of Dahlmann that Sāmkhya is the dominant philosophy of the Mahābhārata, as also of the pre-Buddhistic epic culture, which is writ large in the original Buddhism which itself is not a cult but a culture. The keynote of Buddhism is to be found in the *Triratna*, of which, according to the author, *Sangha* represents the dynamic order, *Buddha* the order of science, and *Dharma* the order of conduct. The difficulty has been to ascertain the nature of the original Sāmkhya philosophy. The author holds that there are two Sāmkhyas in the Sāmkhya-Kārikā. He contends that the first fifty-two Kārikās, without the term *Duhkha* (pain), contain the genuine Sāmkhya, whilst the sixteen Kārikās, from fifty-three to sixty-eight, propound the well-known but "false" Sāmkhya. He says (p. 102) that it is indeed an irony of fate that Sāmkhya passes to-day for exactly that which it has condemned. His conclusion is that the ruling Sāmkhya is a distorted edition of the genuine Sāmkhya. Similarly he expresses the hope that Buddhism, as vijnānavāda, the offspring of Sāmkhya, will be redeemed from its "present state of ignominy." The author thus makes bold to question the validity of the current account of the origin and nature of the Sāmkhya philosophy. His object has been to reclaim that philosophy in its original state. As a result he has, he says, found something "unthought of in the domain of Indian speculation, namely, a theory of Reality and Life that rebels against the doctrine of liberation (*Moksha*) that Sāmkhya is said to be."

I note some leading conclusions. Sāmkhya means the theory of reality,

which is a dynamic logical-moral order. It is conceived as a perpetual ordering, the concept of Reality as ordering disorder being as old as the Vedic *Rita*. Reality is thus not mere Being, nor mere Change, but systematic change or unity in continuity (p. 16). The doctrine is neither realistic nor dualistic (p. 63). Reality is an eternal construction or act; to be is to act. Action is the essence of everything (p. 83). Right action is a never-ending campaign against, and conquest of, error and evil (p. 86). Wrong and ignorance are inherent in the very structure of Reality (p. 86). "Sāmkhya is no religion." Life is not an evil. The fifty-ninth Kārikā owes itself to a world-hater (p. 95). The ideal is not a do-nothing liberation (*Moksha*). Sāmkhya is not a self-centred doctrine of individual liberation that denies the natural social or, better, the logical-moral order (pp. 77, 92). The doctrine (*duhkhavāda*) that life on earth and misery are synonymous, and a certain elusiveness affecting the world-construction as a whole, are later importations. Sāmkhya is not scared by the gloom of the pessimist. It sends forth a clarion call of an active, vigorous, youthful life, lived for the world, in the world, and through the world. It preaches the gospel of action and calls upon all to act with self-determination and courage in the cause of truth, justice, and freedom (p. 41).

There is a Sāmkhya problem. The accounts given of that philosophy vary. There was a good deal of free-thinking in the ancient times prior to India's arrest of development. Sāmkhya in its traditional forms is "atheistic." It has been said that the system is rationalistic, for reason is the ultimate foundation of its truth. It is true that it recognizes Scriptural Authority (*Āptasruti*), but this, it has been explained, may have been done as a matter of policy, though our author gives another explanation. There are, again, intrinsic reasons favouring some of the author's views, and there are difficulties in the case of the traditional Sāmkhya. It will not, however, be said that on the material here supplied the author has established his case. But, nevertheless, his able book is one of great interest, both in itself and as voicing ideas which find some support in the Indian thought of to-day.

JOHN WOODROFFE.

Human Values. By DEWITT H. PARKER, Professor of Philosophy, University of Michigan. (New York and London: Harper & Bros. 1931. Pp. viii + 415. Price 10s. 6d.)

This is an agreeable book to read, but not an easy one to review. It is agreeable to read because it is written in pleasant and polished language, and develops an intelligible and coherent point of view of considerable interest. It is difficult to discuss because of an exaggeration of these very virtues. The exposition flows on a little too smoothly and easily to the end. I am inclined to think that even those who would agree with Professor Parker's main position would say, as they closed the book, "But it is not as simple as all that!" One would welcome more doubts and hesitations and qualifications, even if they broke the main thread of the argument.

The main position on which the book is based is, in the author's own words, "that there is no separate moral interest or value, but that, on the contrary, morality is indissolubly connected with every branch of human activity. . . . If there is any distinctively moral good, it does not occupy the supreme place that has been assigned to it." The argument begins with an analysis of the notion of value, which for Professor Parker is entirely dependent

on human desire. Value is for him simply and solely the capacity of satisfying desire. He entirely rejects any notion of objective values, belonging to objects independently of their being desired, and he is quite prepared to accept the full consequences of his view in the form of a belief in the relativity of value to the desires of individual human beings. He denies, however, that this necessarily leaves us with a chaos of conflicting and isolated individual aims. For he suggests that there may be certain permanent and fundamental impulses common to all human nature, though taking many different forms, which in themselves tend towards a certain system and organization of our desires.

To develop this point he devotes the greater part of the book to a consideration in detail of the main human values or objects of desire. He classifies these into two sections. The first he calls the values of "real life." They include Health and Comfort, Ambition, Love, Knowledge, and "Technological Value," or the value of Efficiency. They also include ethical value, in the narrower sense, which he regards as simply a form of the value of Love. It must be admitted that he extends the term "Love" to cover a much wider range of experiences than would usually be included in it. But there is undoubtedly a certain justification for this. The other main section is constituted by the values of imagination, which include Play, Art, and Religion. If I understand him rightly, he has no doubts at all that religion, so far as it involves any belief, is purely a value of the imagination, created solely to satisfy our desires, without any basis in objective fact.

The final chapter is all too short a treatment of what he regards as the supreme value. He finds this *summum bonum* in the idea of a harmony of desires. But for human beings this must be what he calls a "tragic harmony," by which I understand him to mean that it can never be a complete harmony in which conflict disappears, but that sacrifice and loss must always remain a part of it. The experience of such a harmony would express itself in a mood such as resignation, or what he calls "good humour." In the latter case he would perhaps prefer to speak of it as a comic harmony. "For most men," he concludes, "the ultimate value is some tragic or comic victory which finds expression in a mood of resignation, defiance, faith, or humour, akin to a melody of Mozart or Beethoven." It is an interesting conception. One can only wish that it had been developed more fully.

There is so much that is attractive in Professor Parker's exposition, he faces so frankly and courageously the conclusions to which he believes the facts force him, he is so fertile in interesting suggestions, and opens up so many avenues of thought, that the defects of the book are particularly regrettable. The central defect from which his book seems to me to suffer is that he hardly ever seems capable of appreciating the strength of the opposite position to his own in any controversial question. I do not think, for instance, that either the believer in supernatural religion or the believer in reason as the basis of morality would feel that he had seriously shaken their position at all. Nor would the believer in art as a vehicle of truth. Even those who would be inclined to accept his main contentions on these points would feel rather uncomfortable about the thinness of the argument for them. As a special form of this defect, he seems to me far too ready to make facile appeals to modern science, or "newer conceptions based on scientific knowledge," or even to modern psychology as proving this or that point, and in particular as making a naturalistic view of ethics inevitable. The bearing of scientific discoveries on these problems is much more doubtful than he seems to think. And when it is a question of modern psychology, I should have thought that no one who reviewed the present position of psychological studies would

venture to make any confident assertion about the conclusions that emerge from them.

It is possible that Professor Parker would reply that I am demanding too much in asking that a single book should treat adequately of all these problems. In such a case my criticism would be that the book extends its range too widely and treats of too many questions. If, on the other hand, it were to be regarded not as a final discussion but as a programme summarizing the points which the author was going to discuss fully in a series of subsequent works, such a criticism would no longer apply.

G. C. FIELD.

The Nature of Evil. By RADOSLAV A. TSANOFF, Ph.D., Professor of Philosophy, the Rice Institute. (New York: The Macmillan Company. 1931. Pp. xvi + 447. Price 3 dollars.)

This book is in the main an historical study of attempts made by philosophers and poets to understand the nature of evil and its place in the universe. The survey is greatly helped by a number of biographical sketches of all the more recent thinkers.

The survey ranges from Buddha and Job to modern times, from the optimism of Pope to the pessimism of Leopardi, from Pascal's "The heart has its reasons" to Schopenhauer's ideal denial of the will to live, and Hartmann's goal of mass-suicide. Three very interesting chapters are devoted to the reflection of the problem in the works of certain poets, in particular Milton, Byron, Goethe, Leopardi, and De Vigny. All quotations are in English, but in the case of foreign writers the original is given in the notes.

Professor Tsanoff's main contention with regard to the pessimists is that even the most extreme of them are led sooner or later to recognize some kind of redeeming feature in the world, and even *some* kind of redemption for the individual. Thus, "more ultimate than Schopenhauer's pessimism is his doctrine of salvation." Schopenhauer, we are told, did not realize the full import of his own attitude toward æsthetic and moral experience. Hartmann is forced in the end to recognize that the world process is "the means of God's self-redemption from that in him which should not be."

In the last chapter the author outlines his own answer to the problem of evil. On the one hand, however black things may be, the world cannot be devoid of real value so long as it includes minds that condemn it. On the other hand, evil cannot be simply dismissed as illusory, since the illusion itself is both real and evil. Further, if either good or evil is real, both must be, for they are co-relative to one another. Absolute optimism is as untenable as absolute pessimism. The next point is that good and evil cannot be identified with pleasure and pain. "A standard other than pleasure and pain is needed if pleasure and pain are to be tested, graded, and so integrated with the other values of life." What, then, is the standard? Valuation is bound up with conative experience, and "the world discloses value only in and to personal experience." We must not, however, think of nature as indifferent to value, since "nature includes human nature." "Value is personal; its range and roots are the range and roots of personality, and these, after all, reach over all nature. To ignore this last is to ignore the problem how a universe without mind or value could produce mind and value." The author's next point is that good and evil are gradational. "Evil is literally degradation, the surrender of the higher to the lower in the scale of being." Thus "the career of microbes and bacteria are (*sic*) in their own way as natural as ours: what is evil is rather their ascendancy, in

disease, over the higher course and career of man." Though good and evil are not distinct realities, both are real factors in the world. Evil is not "somehow good, any more than sinking is somehow rising." And though error and vice and ugliness are the conditions of good, they are none the less evil. "They *are—to be resisted.*"

Space forbids an adequate criticism of Professor Tsanoff's solution of the problem. The present reviewer can agree with much of it, but feels impelled to make two comments: (1) The restriction of evil to the sphere of personality seems to imply either a very special meaning for "evil," or a very vague meaning for "personality." (2) By regarding the evil in the universe as instrumental to a good which is conceived as essentially personal, the author does less than justice to what I am tempted to call the religious intuitions of atheists. He quotes Leslie Stephen's dictum that "nothing is less poetical than optimism, for the poet's function is to harmonize the sadness of the universe." Some feel that, when the poets do this, they perform not only a poetic but a religious function, and that they reveal a value that is not essentially personal.

W. Olaf Stapledon.

The Universe in the Light of Modern Physics. By Dr. Max Planck. (London: George Allen & Unwin Ltd. Pp. 110. Price 4s. 6d. net.)

This excellent little book is a translation of two smaller books which have been successfully merged into one. It contains the views of one of the foremost of German physicists on the philosophical basis of modern physics.

Planck distinguishes three worlds: the real world, incapable of direct apprehension by the senses; the world of sense-perception; and the world of Physics. The latter differs from the other two worlds in that it is "a deliberate hypothesis put forward by a finite human mind; and as such it is subject to change and to a kind of evolution" (p. 10). It has two functions: to apprehend the real world as completely as possible, and to describe the world of sense-perception in the simplest possible terms. Neither function is superior to the other. The first is essential in guiding the *imagination* of the investigator, the second provides him with a firm foundation of *experiment.* The fact that physical theories are becoming more abstract, receding farther and farther from the world of sense, is a sign, in Planck's opinion, of closer approach to the world of reality. This opinion, of course, he cannot prove logically; but then, neither can it be refuted logically, and the final criterion must always be that "that world-view is the best which is most fruitful" (p. 15).

There follows a short account of Quantum Theory, of which the author was the originator, and of the Theory of Relativity. In spite of its brilliance, however, a short account of such abstruse subjects must necessarily make difficult reading, and most philosophers will probably prefer to pass on to the second portion of the book which deals with the nature of physical laws. Here the author uses his distinction of three worlds in a most illuminating manner, with many searching analogies. Although he admits that *logically* it may be justifiable to assume, as some physicists do, that the only kind of laws in Nature are statistical, Planck holds that it is certainly not *expedient,* and maintains "that the goal of investigation has not been reached until each instance of a statistical law has been analysed into one or more dynamical laws" (p. 84). In this connection Planck shows that free will is perfectly compatible with the universal rule of strict causality, a proof which the reviewer has always considered convincing, even if human motivation were completely conscious, which of course it is not.

The book concludes with the hope that more attention will be given by physicists to the "views and ideas of our great philosophers," since "science cannot exist without some small portion of metaphysics" (p. 107). Altogether an excellent book, profound, readable, and refreshingly free from mysticism, dogmatism, and journalese.

G. B. Brown.

Social Substance of Religion. An Essay on the Evolution of Religion. By Gerald Heard. (London: George Allen & Unwin Ltd. 1931. Pp. 318. Price 10s. 6d.)

This volume on the basis of psychology (animal as well as human) and anthropology offers the world a new religion, and from the standpoint of that religion a new interpretation of the evolution of religion hitherto. The argument of the book is as follows. Man is miserable, because he is as a house divided against itself. This division is due to the assertion of his individuality, his detachment from social solidarity. The outbreak of individuality was possible, because society itself became the scene of a conflict between two competing social types, the herd, pack, or group, and the family. The family ceased to be merely biological in function and became socio-psychical, because the group through increase of numbers lost that intimacy of its members to which it owed its cohesion, this expansion being due to the economic need for food. The author differs from Freud in not regarding sex as primary in the *libido*, but as secondary, the group emotion being primary. He disagrees from Dr. Malinowski in asserting "(1) that the matriarchate is more primitive than the patriarchate" and "(2) that the group is coeval with the family" (p. 40). As the Œdipus complex belongs to the patriarchate it is not primitive. For the beginnings of the group and its emotion he is not content with anthropology to go back to primitive man; he goes back with palæontological psychology to *pithecanthropos*, etc., and conjectures what their condition was, and what seems still more important for his purpose with animal psychology to the apes. Among the chimpanzees the group as a social force comes before the family. For him religion is the emotion of the group, and the family as a psycho-social unit and the individual appear a disturbance to be deplored. All through the book this antagonism to both is maintained; and the family is always treated as socially harmful (pp. 227, 235, 240), because it is opposed to *equalitarianism*. Even sex, which seems to share in this disparagement, is to be sublimated in the group emotion. As twelve seems to be the largest number in which this group feeling can preserve its necessary intensity, the extension beyond gave the family its opportunity. As first the sentiment gathered around the mother; and there emerged the religions of fertility, in which two tendencies emerged, *erotism*, the indulgence, and *asceticism*, the repression of sex. As individuality further asserted itself, the matriarchate yields to the patriarchate. The argument needs this inversion; but there is little doubt that the nomad or pastoral stage preceded the settled or agricultural, that is, the patriarchate the matriarchate.The individual, not finding his satisfaction in the family or the larger society, looked beyond death, and so the belief in a future life, *salvationism* or *survivalism*, emerged. All these developments are perversions of religion, since religion is this devotion to the group. In the *Agape* or love-feast of the primitive Christian community the real religion for a short time emerges, and partial emergences are found in the Moravian and the Friends' community. The ideal which the future may realize seems to be a recovery on a human level of the chimpanzee group.

"Religion, when it is not ascetic, is strong, satisfying, and successful in so far as it dispenses with reason, neglects intellectual systematization, or even consistency, and concentrates on behaviour, for its aim in these things—though its conductors cannot realize it consciously—is the elimination of individuality" (p. 291). "Only the organization which sets up the group and the devotion which abandons self-salvation, accepts loss of individuality as its aim, realizes and aims at the unity of conscious and subconscious, of mind and body, only that can recover religion and make men sane" (pp. 298–299). The Hebrew, Jewish, and Christian religions are forced into the Procrustes bed of this conception of religion and its evolution.

Violence has again and again to be done to the facts, as a few illustrations will show. A statement is made about Hosea's wife (p. 155) which rests on no evidence in the records. Josiah is mentioned immediately after Hosea, and Hezekiah follows. Elijah and Elisha are mentioned in close association with Isaiah. To treat the prophetic movement as an ascetic reaction from the popular fertility religion is far too restricted a view. In the same way, to limit the value of early Christianity to the brotherly love of believers and its expression in the Agape is to ignore what was most significant, viz. that human brotherhood was based on the divine Fatherhood as revealed by Jesus. The Sermon on the Mount, which is mentioned with approval, has that Fatherhood as the religious basis of its moral demands. Of Paul a most arbitrary account is given. He is discredited with changing the Agape into the Mass (p. 225). He is represented as beginning to organize the Church after he had lost hope of an immediate parousia, whereas even his later letters show his mind continued to waver, and he began to organize at the commencement of his missionary labours. His restraint of extravagance in Thessalonica or Corinth is represented as a repression of enthusiasm. The Reformation is described as a revolt of the Father religion against the Mother and Child religion, a reversion from the matriolatry to the patriolatry. "Protestantism persecuted Nonconformity" (289). What does that statement mean? "All is grist for his mill"—whether facts are stated correctly or not.

A fault of the book which deserves condemnation is the quite unnecessary use of words compounded mostly from the Greek which have as yet no place in the English language. A science is entitled to use its technical terms; an indecent idea may sometimes need the disguise of an unfamiliar Greek or Latin word. But for most of these words, unknown to English literature, there is here no excuse. Erethism, orgasm, catharsis are this author's equivalents for Love, Joy, Peace. *Algolagniac, anchylosed, catalytic, paideroid* are a few samples out of a large number. An author owes it to his readers to make the use of his book easy, especially when there is, as here, a continuous argument, by division into chapters with chapter headings, and an adequate Table of Contents. All this author gives is a title for two parts: Part I, the Problem, the Conflict; Part II, The Historical Consequences. Part I, although it runs to forty pages, is not divided into chapters; Part II is, but no headings are given to them.

I need hardly add that the whole book shows no understanding of what religion is in reality; the author is entirely outside of what are the distinctive and essential features and factors of religion. Animal psychology and anthropology cannot make the Christian faith yield up its secret. While I too desire the correction of individualism by the sense of social solidarity, that does not involve the suppression of individuality, for individual development and social progress can advance *pari passu*. The family is not the enemy, but the nursery and school of other social affections, for in the love of husband and wife, parent and child, the human heart can realize its richest treasures.

Religion without faith in God, salvation from sin, hope of immortality, cannot produce the love of the brethren, the group-sense the author desires.

ALFRED E. GARVIE.

La filosofia di Tommaso Hobbes. By ADOLFO LEVI. (Milan: Società Dante Alighieri. 1929. Pp. 423. Price Lire 20.)

The growing Italian interest in the older English philosophers is well exemplified in the writings of Professor Levi. In 1922 he published *La filosofia di Giorgio Berkeley*, and in 1925 added to this *Il pensiero di Francesco Bacone*. The competence shown in the first of these (I have not read the second) is shown afresh in the present book on Hobbes. The book is extremely welcome, for with us Hobbes seems to have faded into a respectable shadow; at any rate, we have reduced him to the author of the *Leviathan*, and have produced no native monograph on him since that of Croom Robertson (1886). It is a rebuke upon us to receive the present thoroughly documented study from Italy. We must congratulate the author, who has not only mastered the long array of volumes of Hobbes's works, Latin and English, as edited by Molesworth, but also made full use of the researches of Tönnies and of other less concentrated Continental contributions. His notes contain up-to-date bibliographical material.

Professor Levi is following out a programme, a programme of protest against the indiscriminate opposing of English philosophy as empirical to Continental philosophy as rational. Perhaps he has taken too seriously the generalizations of historians, for, after all, historical generalizations are often pædagogical rather than scientific in intention; but his protest is valuable. It is certainly extraordinary that we attach the same label to thinkers so fundamentally different as Berkeley and Hume, and Signor Levi did well in the first book of his trilogy to deny that Berkeley was merely a link in the chain of British empiricism. In his present book he is on still stronger ground. Hobbes was certainly not an empiricist in the strict sense of the term. Whatever emphasis he may have laid on the principle that *nullum est in intellectu quod non prius fuerit in sensu*, he did not himself follow that principle, and his system is not characterized by it. He went to experience for his data, but he elaborated and pressed beyond his data with a technique that can only be called rationalistic, operating logically with the concepts of substance and cause. He stood nearer to Descartes than to Bacon, was inspired like the former by the ideal of mathematical deduction. He hoped to deduce the content of physical science, of jurisprudence, of moral and political science from the principles of dynamics, from the primary properties of bodies in motion. True, he failed to fulfil his hope; especially in treating of human affairs he was obliged to resort to analysis of the facts and advance from them instead of to them, and he did not manage to make the inductive and deductive lines meet. But the hope directed and sustained his thinking. His philosophy, in fact, started from, and remained anchored to, a materialistic preconception; this preconception was developed under the impetus of his own logical bias, with reinforcement from the examples of Descartes and Galileo. He wanted and tried to be a ruthlessly logical materialist. His very empiricism, so often and so wrongly emphasized, was but an incident in his ruthless reasoning: since motion is the *prius* of everything and motion can produce only motion, human experience must begin with motion, and therefore with the first effect of physical action upon us, that is, with sensation. And since sensation, being motion, can only cause motion, all other experiences are motions

too. Thus his materialistic (more specifically, mechanistic) preconception logically, at any rate in a way that Hobbes felt and thought to be logical, generates his empiricism, and this in turn subserviently generates his materialistic theory of mind.

The above is a very drastic abbreviation of the thorough account that Professor Levi offers us of Hobbes's thought as an initial materialistic bias rationalistically unfolded. It is good to have an account that so well marks out the fundamental directive principles. The author deserves our thanks for the high compliment of devoting so much labour to an English thinker, and our congratulations on the result.

T. E. Jessop.

The Mind and its Body: The Foundations of Psychology. By Charles Fox. (The International Library of Psychology, Philosophy, and Scientific Method.) (London: Kegan Paul, Trench, Trübner & Co. 1931. Pp. xii + 316. Price 10s. 6d. net.)

The title of this book insinuates its philosophical purpose, and roughly indicates the conclusion of an argument based upon a criticism of currently accepted psychological views, as well as upon some of the results of recent neurological discoveries. Mr. Fox finds reason to reject not only the basic assumptions of earlier psychological systems, such as faculty psychology, associationism and structuralism, but breaks a lance also against many conceptions widely received in current psychology. There are, he argues, no images (as copies of presentations), no instincts, no mental energy. There is no point-to-point relation between mental and neural events. There is cognition which has no neural counterpart. Ideas and images (in the sense in which the author uses the term) are in no way dependent upon the organism. His criticism, however, is not merely destructive; for, while rejecting the implications of an outworn system of psychological concepts as taken over by physiology, and thence having inevitable repercussions in psychology, he points out that many of them are relevant and accurate enough when properly defined and used in their proper context and place.

While some of his contentions will be readily accepted—his admirable criticism of the mechanics of the 'conditioned reflex' is a case in point—others are bound themselves to come in for criticism. Whatever an 'image' in itself may be, for example, it would seem clear that by its intervention the mind is somehow placed again in the subject-object relation with the original presentation sensorially apprehended. Again, the concept of mental energy is rejected on the grounds that it is borrowed from physics, and that it is of no use in explaining the phenomena of fatigue. But the notion itself was in the first place taken over from psychology by the physicists, and it still has its pristine value as a psychological concept, its chief use lying in the explanation not of fatigue, but of mental span. Moreover, such data as we have in respect of mental fatigue are, as Mr. Fox points out, very conflicting, some of them fitting in well with the notion of energy, some not. Many will think also that Mr. Fox has not made out his case for the rejection of the concept of instinct as involved in human behaviour, and that custom cannot be substituted for it. He is certainly right in saying that "an instinct without some corresponding specific features in the biological or social environment is an empty or meaningless conception." But, surely, no one ever thought otherwise. The point is not whether human beings bombinate in a vacuum, but whether there are connate modes of reaction, specifically distinct but allowing immense variability in detail, to different environmental situations.

Such criticisms do not, however, destroy the main foundation upon which Mr. Fox builds his interesting philosophical superstructure concerning the body-mind relation, some sketch of which may be briefly given as follows: The living body is directed by mental factors. Mind, as psychoplasm, forms a unity with the bioplasm which it controls. But there is mind also, as subject or ego; and this is in turn controlled by spiritual forces, and is aware of modifications in the psychoplasm. The relation of the ego to the organic whole composed of psychoplasm and body can only be expressed by means of spiritual concepts; and spiritual concepts can be real motive forces for volitional acts. That is to say, the ego has the power of choice on grounds of value; and this constitutes its freedom. The distinction between mind as psychoplasm and mind as subject or ego makes necessary for a solution of the body-mind problem the relating of four terms instead of two. Person, spiritual forces, psychoplasm, and body have all to be reckoned with, not body and mind alone. Precisely what the relation may be is not altogether made clear by the analogies he uses; but the suggestion with which Mr. Fox ends his volume—that the mind as ego can survive and even be active after bodily death—points in the direction of the view that the human being *anima rationalis est mortali atque terreno utens corpore.*

In the course of his discussion of freedom the author emphasizes two points of the greatest importance. The first is that the distinction between appearance and reality has no significance where the ego is concerned. The second is that volition is not conation but initiative. And he adopts with approval the view of Mr. Wyatt that volition at its highest level is the creation of motive.

These are, in the opinion of your reviewer, points fundamental for any discussion of the human will and personality. It is interesting to find them so clearly stated as conclusions drawn from the data set forth in the earlier chapters of the volume.

F. Aveling.

The Dilemma of Religious Knowledge. By Charles A. Bennett, formerly Professor of Philosophy in Yale University. Edited, with a Preface, by William Ernest Hocking. (New Haven, U.S.A.: Yale University Press. Oxford: Humphrey Milford. Pp. xv + 126. Price 9s. net.)

A book that closes with the admission that it has examined the current theories of religious knowledge, and rejected them all, may appear to be likely to prove unsatisfying reading. Yet this is far from being the case. Indeed, it is long since this reviewer has read anything on this subject more suggestive and striking than Professor Bennett's volume. His death at the early age of forty-four has taken way one who, judged by the promise of these pages, might have been one of our leading thinkers in religious philosophy. Professor Hocking, whose judgment carries great respect, says that he was such a person as one would choose as one's guide in thinking about religion. He was in no sense agnostic. His firm conviction was that religion conveys insight about the real world. Yet his ardent sincerity forbade him from accepting current theories, and his great desire for the true way of approaching the problem made him too cautious to advance an untried theory of his own. All he claims to have established in these pages is that the question of the truth or falsehood of religion is primary and unescapable, and that to treat religion as Santayana does, for example, as a kind of poetry, or with Durkheim as a merely sociological phenomenon, is to play with the issue. Bennett's deep

religious conviction could not allow him to rest satisfied either with an evasion or with a facile solution of a problem which to him was a fundamental issue of life. He states the problem in these words: "Can this other world be said to be known at all, and if so, how is it known?" He cannot rest content with the will to believe. He held that if anywhere it was possible to break from illusion and touch reality it was in religion. Religion to him was eternal truth or nothing. Yet the God of religion is not one who explains the world, but one who overcomes it. The God who is mere fact is not God. Bennett admitted all this, but he rebelled when it was therefore concluded that we could dispense with fact and literal truth altogether in religion. The claim to revelation he says is a claim to truth. So he stands, in these pages, a lonely figure, seeking without finding, yet sure that he that seeketh findeth.

Not the least attractive aspect of the book is the charm of its phrasing and the felicity with which Professor Bennett states the inwardness of a problem. For example: "Faith presents a puzzling union of certainty and uncertainty"; "One can hardly maintain that the doctrines of heaven and hell are meant to embody contributions to cosmic Geography"; "The scandal of the Cross, we might say, is that the weak things of the world have become strong. That is also the scandal of the Superman." Or again this: "The error of Hedonism is the error of sentimentalism everywhere—the belief that certain states of mind or certain attitudes are valuable for themselves." Flashes of illumination like these cut away the wrappings and reveal the roots of a tangle far more satisfactorily than a volume of polemic.

Professor Bennett's book makes one think. It is impossible to read it without finding the insistent challenge to mental laziness, to accepted and unthought-out beliefs. If he solves no problems, he at least states them unequivocally, and if, as the mystics insist, the negative or purificatory process is the antechamber to knowledge, one must be thankful for what is said here, even though at times it makes one feel uncomfortably naked mentally. It is sad to think that this ardent seeker passed on without finding the solution he so keenly desired. May one not hope that if he could not give it to us, he has now found it himself, *sub specie æternitatis*?

E. S. Waterhouse.

The Mystic Will. Based on a Study of the Philosophy of Jacob Boehme. By Howard H. Brinton, Ph.D. With an Introduction by Rufus M. Jones, M.A., D.Litt. (London: George Allen and Unwin Ltd. 1931. Pp. xiii + 269. Price 8s. 6d. net.)

This is a most interesting study of a most interesting philosophy. Its author, Boehme or Behmen, was an uneducated Silesian peasant; yet Hegel, Schopenhauer, and Schelling in Germany, and Sir Isaac Newton in England, studied his system carefully. Except for occasional visions, Boehme was outwardly a very ordinary shoemaker, a married man living happily with a wife and four children, so meek that when he was rebuked from the pulpit by some Jack-in-office, he simply went to ask wherein his fault lay. On being refused a hearing and sentenced by the Town Council to banishment at the instigation of the irate parson, he humbly accepted the decree. Subsequently, he was examined for heresy at Dresden, but acquitted. The end of his days was happier, though he was but forty-nine when he passed, speaking of the sound of sweet music, and with his last words saying, "Now I go hence to Paradise."

Boehme had no historical perspective. He was no philosopher of the schools. His aim was practical: his desire to save souls. His genius and spiritual insight could not save him from the inevitable errors and crudities with which his system abounds. Yet Dr. Brinton, in the introduction, is not extravagant in saying that Boehme was the real founder of the romantic Idealism that ranged from Fichte to Schopenhauer.

In a certain sense, too, Boehme anticipated the famous Hegelian triad. He taught that though evil and good manifestly are contraries, evil apart from its quality is strength. Whilst it has its quality as evil, it prevents the full manifestation of the good, because evil is a check on the power of good. But if instead of evil being annihilated that good may exist, the quality of evil is exorcized, then what remains, namely its strength, added to good, perfects the good.

Boehme was a prolific writer. His first work appeared in 1612. No more appeared till seven years later. It is said that the opposition gave him permission to stay in Gorlitz only on condition that he abandoned his teaching. After he left Gorlitz, his literary activities were manifold, and he issued over thirty books and pamphlets in twelve years. To a modern reader, even to one with mystical sympathies, much of what Boehme taught seems fantastic. "The whole of Behmenism," wrote Wesley, "both phrase and sense, is useless, most sublime nonsense, inimitable bombast, fustian not to be paralleled." Yet even allowing for the controversial fashions of the time, Wesley was far too sweeping in his statement. Boehme was a genius, intoxicated mystically, as Spinoza was intoxicated intellectually, with God, and the very incoherence of his utterance at times was the result of his glimpses of things unlawful to utter. In part it was due to less excusable causes, for Boehme took the nonsense of the alchemists seriously, and at times fuddled himself with the Kabbala. Even Dr. Brinton's enthusiasm cannot always make Boehme intelligible, though he can always make him interesting.

One is glad to extend a warm welcome to this scholarly and readable essay, which marks a real contribution to the knowledge of a little-known man. Very little in English has hitherto been available on the subject, and despite the fact that the tercentenary of his death was celebrated a few years ago, little recent in German is available. Dr. Brinton has remedied that by a patient inductive study, which, without undue length or tediousness, illuminates both the personality and teaching of the man, and makes this monograph a model of its kind and a help to the understanding of the sequence of philosophical thought in Germany between the Reformation and Kant.

E. S. Waterhouse.

The Psychology of Men of Genius. By Ernst Kretschmer. (London: Kegan Paul, Trench, Trübner & Co. Ltd. 1931. Pp. xx + 256. Price 15s.)

The eleven chapters of this volume have been elaborated from a series of lectures delivered by Dr. Kretschmer in former years. In each chapter is advanced a single simple argument, little related to the contents of the other chapters. Nowhere are the many conclusions summarized or marshalled in a final presentation. The reader will therefore close the book with a number of heterogeneous impressions in his mind, all stimulating, and nearly all reflecting those qualities of insight and originality for which the writings of Dr. Kretschmer are now famous.

The central idea of the book is that, with the exception of the works of a group of "theoretically inclined scholars with weak or mediocre development of the elementary instinctive urges," productions of genius result from affective tensions set up, in the minds of highly endowed persons, by the coexistence therein of antithetical or incompatible psychic dispositions. Emphasis is laid on the necessity for appropriate hereditary endowments for the manifestation of this creative conflict. In an interesting criticism centering round the personality of Bismarck, of the Adlerian conception of over-compensation, the author asserts that hereditary "sthenic" characteristics, contributing to a "sthenic-asthenic polarity," form a vital element of this antithesis. From genetic and psychological conditions likely to give rise to such psychic polarities will therefore originate those tensions from the heat of which works of genius are forged.

In so far as we may regard conflict as a characteristic of psychopathic states, so do we find an association between genius and mental abnormality. (Chapter 1.)

Of conditions which give rise to conflict (and therefore to genius and psychopathic states), homosexuality, of which the author distinguishes two polarities, and sado-masochism are the most important. Arrested sexuality and partial infantilism also play a *rôle*. (Chapter 2.)

Persons of cyclothyme and schizothyme dispositions have different "ranges of temperament," between which the necessary tensions can arise. In these terms we are helped to understand different categories of mental constitution and of genius. (Chapter 3.)

Genius is most frequently produced by "cross-breeding" and by processes described as "luxuriation of hybrids," "germinal hostility," and "warring heredities." (Chapter 4.)

It commonly occurs in crossings between Nordic and Alpine races, after a latent period has elapsed, in the course of which the warring heredities become productively stabilized. (Chapter 5.)

These initial five chapters form the first part of the book, and are summarized under the general title of "Laws." The remaining six chapters, comprising the second part under the heading of "Patterns," consist for the most part of short illustrative biographies.

The character of Goethe, as analysed by Möbius, provides the theme of a chapter on "Spiritual Periodicity." In the life of C. F. Meyer, the poet, is illustrated the relation of genius to the phenomena of sex and puberty. The psychic vicissitudes of Robert Mayer, to whom is credited the discovery of the law of the conservation of energy, are quoted as exemplifying a mentality typical of scientists. "With many great scientists and inventors," writes Dr. Kretschmer, "passionate emotions develop which drive their thoughts constantly in the same direction, producing the utmost tension, until at last a short-circuit occurs. . . . Sometimes a spark leaps to a new spot where up till then no human thought has passed." And: "Genius is industry, of course. But not the simple capacity for taking pains. Not extensive but intensive industry: industry that is directed with unbalanced ardour upon a definite point. Scientific and inventive genius is industry under the sway of an over-valued idea." The incompatible heredities, involving a "sthenic-asthenic polarity," transmitted to Bismark by his father and mother, and the calculating fanaticism of Robespierre, are discussed in a chapter upon "Heroes and Leaders," the most stimulating in the book. And lastly, the biographies of Hölderlin and Rousseau provide material for chapters on "Inspired Characters" and "Prophets." In an appendix are collected about seventy portraits.

The language of this readable and well-translated book is untechnical, flowing, and incisive. It is recommended to persons interested in the affective sources of the impulse to philosophize.

C. P. BLACKER.

The Holy and the Living God. By M. D. R. WILLINK, S.Th. (London: George Allen & Unwin Ltd. Pp. 293. Price 10s. net.)

This is a theological rather than a philosophical work, though the distinction is not absolute. The author takes up the idea of the numinous or holy, which has become familiar through Otto's book, and works out the implications of that notion, chiefly by reference to the religion of Israel. There is a certain amount of anthropological matter, and there could with advantage have been more. If the theologians had been more conversant with primitive religions, and with the Tabu Mana theory, the idea of Otto's book would have appeared an application rather than a discovery. There is much that is useful and valuable within these pages, but the author introduces some curious speculations. He speaks of Jeans' reference to radiations from some unknown source coming into our universe, and then refers to the possibility of powers of a greater penetrative capacity coming from some source inaccessible to psychology, and adds: "What if prayer, faith, hope, holiness are mighty forces, the laws of whose working not only apply throughout our universe but transcend it?" He thinks this will help against the "rising tide of materialism." The argument seems strangely inconsequential, for such things may indeed be mighty forces, but they are not of the kind to which reference is made in the paragraph, and it is news that in these days the tide of materialism is rising. Mr. Willink seems to have the idea of radiation oddly fixed in his brain, for a paragraph heading refers to "Radio-active powers of the holy body," but reference to the text does not help much, as all that is said is that holiness radiates, as one might say, I presume, influence does, but this is not intelligibly radio-activity. One also thinks the diagram on p. 187 rather out of place.

Mr. Willink also seems to think that the families who received the confiscated lands of the Church at the time of the Reformation were under some curse of the Holy, and applies the idea, somewhat hesitatingly, to the disendowment of the Irish and Welsh Churches in modern times. It was a "concurrence" that after the French Revolution, when more Church property was confiscated, the population of France began to decline. "Is there perhaps some consuming power about sacred things even as the ancients believed?", he asks. It is a pity that what is in many ways a careful and sober study should suffer in these ways from the author's over-beliefs.

E. S. WATERHOUSE.

Hegel's The Phenomenology of Mind. Translated, with an Introduction and Notes, by J. B. BAILLIE. Revised Second Edition. (London: George Allen and Unwin Ltd.; New York: The Macmillan Co. 1931. Pp. 814. Price 25s.)

This important work was originally published in 1910 in two large volumes. It is now issued in a single handsome volume, not much larger than each of the original two. It has been revised and corrected throughout, but the changes are comparatively slight. The issue of it at the present time is very opportune, in view of the centenary celebrations.

As is well known, the *Phenomenologie* was Hegel's first systematic treatise. It was written with a certain verve and literary grace that made it, for a considerable time, the most popular of his writings; and it has sometimes been regarded as the best introduction to his general point of view. I suppose it can hardly now be regarded quite in that light. Serious students of Hegel naturally begin with the *Logic*, possibly accompanied by McTaggart's *Studies in Hegelian Dialectic* and later commentaries, and perhaps preceded by Caird's little biography of Hegel. The *Phenomenology*, then, falls into place as part (a very illuminating part) of the later Philosophy of Spirit. But many students might still find it worth while to read it at a comparatively early stage in the study of the Hegelian philosophy. The Philosophy of Nature is now rather out of date, and so is a good deal of the Philosophy of Spirit. Perhaps the *Phenomenology* still gives the best general summary of his political views; and it has been very well translated and expounded by Professor Baillie.

J. S. Mackenzie.

Mind and Matter. By G. F. Stout. Gifford Lectures delivered in the University of Edinburgh, 1919 and 1921, Vol. I. (London: Cambridge University Press. 1931. Pp. xiv + 325. Price 12s. 6d. net.)

This is the first of two volumes based on the Gifford Lectures delivered in 1919 and 1921 in the University of Edinburgh. A period of ten years seems a long time to intervene between delivery and publication, but the reading public may be thereby justified in inferring that it is here presented with the definitive views of Professor Stout, who, after a lifelong devotion to philosophy, essays a statement of his philosophic belief, and does so not through the eyes of any school, but on the basis of a logical consideration of the "facts of the case." The problems dealt with are also the most fundamental and most important in philosophy. In these two facts lie the interest and value of the present volume. To praise Professor Stout's work is unnecessary, for its quality is well known to the philosophical world, and has gained him the position of a leader. There is about his treatment of the problems a remarkable sanity, which is no doubt an expression of that common sense which he is largely prepared to defend, though there is a second volume to come, and it is never safe to predict what Gifford Lecturers may indulge in once they are started on the consideration of ultimate questions.

Metaphysics, he considers, is concerned with the ultimate nature of the all-inclusive universe of Being, and this will be the main subject of the second volume, *God and Nature*. Metaphysics is raised, however, whenever anything is taken as complete and final truth; and hence a critical examination of certain theories which make assertions about ultimate reality must be carried out as a preliminary to any metaphysical discussion. This preliminary criticism is the task of the first volume. This attitude leads to an analysis of common sense and scientific experience, effected both on the basis of the facts and in the light of historical theories, although the latter are introduced primarily for the elucidation of his own doctrines. Thereafter he proceeds to a long and careful examination of the psychophysical problem; the scientific treatment of the latter, as expressed by interactionism, parallelism, and materialism, are declared inadequate; and a restatement of the problem, more satisfactory metaphysically, is effected in the doctrine of the embodied self, in a consideration of Kantianism, and in a discussion of our knowledge of physical existence.

In the discussion of the psychophysical problem the theories of interactionism, parallelism, and materialism are met on their own ground, and unless this is borne constantly in mind the reader may have difficulty in following the argument. The criticism turns upon the scientific conception of cause and upon the distinction and relation of mind and matter; and the contention is that these theories are untenable because of their own scientific concepts and their false opposition between mind and matter. But in spite of the acuteness and subtlety of the treatment of the question, the general impression left is that much confusion exists owing to obscurity in, or differences of opinion concerning, the terms of the problem. Materialism—and this may be said of the other theories too—may be accused either of wrongly defining mind or of failing to define it at all; but it is just this matter of definition or lack of it that renders it difficult to tie discussion down to precision. The distinction between mind and matter is one that goes far beyond Cartesianism, and has persisted so effectively that one feels difficulty as to Professor Stout's "common-sense" beliefs. In the statement of the doctrine of the embodied self, the distinction between mind and body or matter as two existences having no intrinsic connection with each other is asserted to be a natural fallacy. It is, however, just as difficult to understand how the scientific person should fall into such a natural fallacy as it is for Professor Stout to understand how the animist should entertain illusions.

The discussion of the problem of our knowledge of physical existence claims to throw fresh light on the problem of the relation of mind and matter. The problem of such knowledge is bound up with the latter, and it is one that has beset all philosophy. In Professor Stout's theory it takes the form of accounting for the relation of sensa and the activity-factor to physical objects. He is prepared to maintain that sense-experience reveals the nature of physical objects as they really are, though of course it does not give an adequate knowledge; but the argument becomes exceedingly laboured in trying to deal with the element of "unity." Seeing that there are several distinct sensory continua, each temporarily continuous with itself but discontinuous with each other, the question of the unity of a single sense-experience arises. For a partial explanation we are referred to "the peculiarly intimate connection of other sensory continua with organic sentience"; and we are given the statement that "what are now disparate sensory continua have been by a gradual process differentiated from a primitive continuum approximating in its nature to our organic sentience," though the differentiation of any such continuum, say, a visual one, from anything like organic sentience must be something of a mystery, and it is therefore difficult to see how a "satisfactory way of describing the present unity and continuity of sense-experience" has been obtained. If, again, the sole clue to the nature of the physical world is supplied by the nature of sense-experience, the physical unity ought to be known to us as merely a duplicate counterpart of the presentation-continuum (p. 250). But this is admitted not to be so. There is, however, an "essential and intimate connection" between sensa and physical phenomena; and yet there is an apparent disparity. For Professor Stout the only tenable solution of this difficulty is to assume a world-continuum from which the sensory continua experienced by individuals are partial extracts; and hence sensa and physical phenomena can be regarded as continuous in existence and fundamentally akin in their general nature. Their disparity, on the other hand, is due to a difference in the way of knowing. On the analogy of memory-knowledge the view is defended that there is an immediate knowledge of existence which is yet not experienced in the way in which sensa and feelings are experienced; and physical existence is asserted

to be known in this way—it is immediately known *through* experience without being actually experienced and also without being inferred.

There may be hesitation about accepting the conception of immediate knowledge on which the preceding argument relies. Apart from this, however, if the disparity between sensa and physical phenomena is due only to a difference in the *way of knowing*, the disparity must be only *apparent*, and the two are the same known only in different ways. The relation of sensa to physical objects cannot be said to have been made clearer. The result of the argument for Professor Stout is that the relation of body and mind requires restatement. It is no longer a question of how body and mind can meet in a unity so as to interact or behave concomitantly or so that one can produce the other. Following Kant to a considerable extent, he asserts that the unity of body and mind in self-consciousness is to be accepted as an ultimate datum, and nowhere else is their unity to be found. His view raises a doubt as to whether there is any problem at all; the belief that there is a problem is due to a distinction and severance of mind and body which arise from a natural fallacy. The distinction between mind and body resolves itself in part into a contrast between the body as external object and the same body as internal object, though this distinction neither is, nor implies, a severance of mind and body such as would make it a question how they come together. But the fact that a distinction is there, however difficult it is to discover it, does raise a question as to the "unity." The problem is shifted on to the distinction between "internal" and "external." The terms unity, continuity, correlation, inseparable unity, communion of mind and matter, are not enlightening. Is the "internal," for instance, the same as the "external" in the sense that they involve only two different ways of being aware of the same thing, or is the "internal" an awareness of something additional to the "external"—an awareness of the body which is quite different from the external? The idea of "unity" means something different in the two cases; and the first comes perilously near the "double aspect" theory which Professor Stout is anxious to reject, and which is suggested by the statement that what is bodily can be also mental.

It is easy to misunderstand the theory, of course, probably owing to what Professor Stout would call the intrusion of the scientific standpoint. But much of the difficulty is due to the term "mind" and "mental." A scientist would very likely be inclined to say that Professor Stout does not touch the problem as it exists for him, for he is concerned with that character of some bodies which is describable as a power of being aware of their bodies internally as well as of bodies externally, and which can be by certain means eliminated. Professor Stout admits that the facts on which the scientist insists are important, but it is a pity that he has not attempted to assess their exact importance and significance. The question of the nature of mind is raised acutely by what he says at various points throughout the discussion of the psychophysical problem. "Mind in general is not produced at all, but is in some way involved as a primary factor in the original constitution of the universe" (p. 94). The alternative which he is prepared to accept in preference to monadism or a mind-stuff is that "mind shall through and through enter into the constitution of nature and give to natural processes a character and implications which could not belong to them if they were merely natural. . . . The mind operative in nature may express itself in various ways. The emergence of experiencing individuals at certain stages in the course of natural process is one among others" (p. 136). The question of the range of mind in the universe can hardly be discussed intelligently if the terms are left so vague and indefinite that any possibilities can be suggested. Professor Stout holds that "ex-

periencing" is essential to mind; he speaks of "mental" as meaning "what is immediately experienced"—a strict meaning contrasted with a loose meaning of "whatever the individual is aware of in self-consciousness" (p. 310); and he entertains the idea of "a mind widely removed in its nature and the conditions of its existence from our own." Evidently the term mind is being used with no definite meaning; and the question must also be asked whether the conditions are conditions of the *existence* of mind, or of the *knowability* of mind, or of the *functioning* of mind. The assertion that "mind in Shakespeare implies mind in the universe to which he belongs"—an assertion on which the presence of mind in the universe is asserted—provokes the query whether it is mind as it is in Shakespeare, and whether in any case it does so in any sense different from that in which the presence of radium in pitch-blende implies radium in the universe to which it belongs. Professor Stout's argument contains no convincing evidence that there is any such implication. All that is justified is that the universe is such as to render a mind like that of Shakespeare possible; and whether this possibility is realizable only if there is mind in the universe remains an open question. He says in criticism of materialism that "its initial assumption is that there is no possibility of the operative presence of mind in nature," and asks on what ground does the materialist take this for granted? It is, of course, a question of evidence; but the question seems difficult, if not incapable, of solution in the absence of any agreement as to what is to be the nature of the evidence admitted. Professor Stout seeks to turn the tables on the materialist by insisting on a prior question. "Assuming that mind really is universally present in nature, have we any reason to count on finding definite and detailed evidence of its presence except where we do actually find it?" His negative answer to this really only shows where we do find the evidence, and does not show *why* mind remains hidden if it is universally present; but obviously the view cannot be supported or defended if no evidence of a definite nature is available. How far the idea of teleology upon which much stress is laid will help towards a solution admits likewise of no definite answer, since there may be difference of opinion as to what constitutes teleology and to what extent it is found in the universe. Teleology, like some other things, may be so diluted as to become worthless.

The whole of the discussion is affected by the views, expressed in the initial chapters, on the relation between common sense, science, and philosophy. The beliefs of common sense, which is defined as "a social product maintained and transmitted from generation to generation through the co-operation of many minds in thinking and willing," must, of course, be subjected to criticism by the philosopher, but the latter must regard them as "having a presumptive claim to acceptance which can be upset only by cogent and positive reasons against them." Science is a specialized outgrowth from common sense, and is limited in its object and methods, and its standpoint is insufficient in philosophy. Science and philosophy are both inferior in authority to common sense when a conflict arises. A conflict is, however, a conflict of beliefs; and the test is the weight of evidence adducible in the case. The fact that common sense holds the belief in question is not itself a fact to be put forward as evidence in support of the belief; and if this fact is eliminated from the evidence and the latter remains inconclusive, the only course to adopt is to suspend judgment. It seems that Professor Stout is really assigning to common sense from the start a peculiar authority, is unloading somewhat unfairly on common sense first his own views, and then trying to appeal to common sense as an independent source of evidence. Common sense need be regarded as only the beliefs that have been formulated

and deposited by a past science or quasi-science, and that have percolated to educated people and others through various channels; while science may disintegrate these beliefs by showing that there are serious difficulties involved, and that they have been formed without full knowledge of all the relevant factors.

The importance of the latter point appears especially in connection with the idea of coherence on which Professor Stout lays very much stress, but the difficulties of which are overlooked by him because of his neglecting an essential aspect of the historical development of science and philosophy. He discusses Hume, for instance, a good deal; and though it is primarily the task of the historian of philosophy to provide an interpretation, yet the meaning which Hume attaches to the conception of "necessary connection," and to the statement that all existences are "loose and separate," may require some consideration, and ought on account of its importance to be elucidated. The traditional view that "secondary qualities do not qualify matter at all" is accepted by Professor Stout, although it is certainly not the view of Locke, and probably not of Descartes, and ignores Locke's distinction between secondary qualities and ideas of secondary qualities. The primary basis of that traditional distinction between primary and secondary qualities is a logical one, namely, "conceivability of connection," as Locke puts it. The difficulty which was thus confronting philosophy was one regarding the coherency of the universe, and the struggle to obtain coherence led to the elimination of colours and other qualities, teleology, and all animism from the real universe. Professor Stout would restore these characters to nature, and holds that such a view is consistent with common sense. He himself insists on coherence, and he ought to face the question what happens to the idea of coherence on his view and what meaning he attaches to it. He has himself to admit that "the test of coherence can be applied in a thoroughgoing way to the primary and only in a very limited way to the secondary" qualities. Is then the aim of the philosopher, which is defined as that of giving a coherent account of the universe as a whole, such as can be achieved, or, if so, what is the meaning to be attached to coherence?

B. M. Laing.

Books received also:—

E. F. Carritt. *Philosophies of Beauty from Socrates to Robert Bridges.* Oxford, at the Clarendon Press: Humphrey Milford. 1931. Pp. xxi + 334. 15s.

Douglas Fawcett. *The Zermatt Dialogues.* London: Macmillan & Co. 1931. Pp. xxviii + 541. 21s.

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N. Bentwich. *Solomon Schechter.* London: George Allen & Unwin Ltd. 1931. Pp. 59. 2s. and 1s.

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HERBERT DINGLE, B.Sc. *Science and Human Experience.* London: Williams & Norgate. 1931. Pp. 141. 6s.

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C. F. SANDERS. *The Taproot of Religion and its Fruitage.* New York: The Macmillan Co.; London: Macmillan & Co. 1931. Pp. viii + 266. 10s.

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I. Mears and L. E. Mears. *Creative Energy.* London: John Murray. 1931. Pp. xviii + 239. 6s.

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J. Ortega y Gasset. *The Modern Theme.* London: The C. W. Daniel Co. 1931. Pp. 152. 6s.

Joseph Needham. *Chemical Embryology.* London: Cambridge University Press. 1931. Pp. li + 2021. £5 5s. the three vols.

William Ernest Johnson, 1858–1931. From the *Proceedings of the British Academy*, Vol. XVII. London: Humphrey Milford. 1931. Pp. 26. 2s.

INSTITUTE NOTES

THE following letter appeared in the Press on November 6th and 7th:—

THE NEED OF CULTIVATING SYSTEMATIC THOUGHT

SIR,

In the multitude of causes that appeal through your columns to the British public, philosophy might seem to be the last that has a claim on the attention of practical men. But it is not difficult in the present disorganization of beliefs in fundamental principles that is manifest in every department of life to see the need of a cultivation of systematic thought that has the most intimate bearing upon practice. We venture, therefore, to invite public attention to the work of the British Institute of Philosophy.

Founded in 1925, with the late Lord Balfour as its president, the Institute has now a membership of over 1,400, which includes, in addition to the general body of members, almost all the representative philosophers in Great Britain as well as many distinguished scientists. The Institute publishes a quarterly review, *Philosophy*; it holds courses of public lectures and organizes reading circles; it arranges for the delivery of addresses by men of authority.

In addition to the work which is being done in London, there are active local centres in Bangor, Cardiff, Liverpool, Newcastle and Durham, and Sheffield.

The Institute is anxious that its work should be more generally known in order that an enlarged membership may open to a wider public an opportunity to study the principles that underlie human experience and action in science, art, politics, morals, and religion. Those of your readers who would desire to become members of the Institute (the subscription is one guinea, including the quarterly review), or to obtain further information with regard to it, are invited to communicate with the Director of Studies at the rooms of the Institute in University Hall, 14, Gordon Square, London, W.C.1.

Yours, etc.,

S. ALEXANDER.
ARTHUR EDDINGTON.
WILLIAM EBOR.
W. R. INGE.
A. D. LINDSAY.
OLIVER LODGE.
J. H. MUIRHEAD.
RUSSELL.
RUTHERFORD.
HERBERT SAMUEL.
W. R. SORLEY.

LONDON, *November 5th.*

PROPOSED NEW CENTRE OF THE INSTITUTE AT MANCHESTER

Members will be interested to notice growth of the Institute in the proposal to form a new centre at Manchester. Professors S. Alexander and J. L. Stocks have recently written a letter to the *Manchester Guardian* in which they say that it is hoped to arrange for a public meeting to be held in Manchester early in the new year, to be addressed by the President of the Institute,

Sir Herbert Samuel. Provisionally the date and time of this meeting have been fixed for Friday, February 5th, at 5 p.m.

LENT TERM begins on January 12th and ends on March 23rd.

The following courses of lectures will be given during the term:—

"MONISM AND PLURALISM," a course of six weekly lectures by Miss H. D. OAKLEY, M.A., D.Lit., on Tuesdays, at 5.30 p.m., at University Hall, 14 Gordon Square, W.C. 1, beginning January 19th. The lectures are free to members. For non-members of the Institute the fee for the course is 12s. 6d.

"SOME FUNDAMENTAL PROBLEMS OF PHILOSOPHY," a course of six lectures to be given by C. D. BROAD, M.A., Litt.D., on Thursdays, at 6 p.m., at University Hall, 14 Gordon Square, W.C. 1, in the Lent Term, beginning January 14th. The lectures are free to members of the Institute. For non-members the fee for the course is 12s. 6d.

"INTRODUCTION TO PHILOSOPHY." The Director of Studies will resume this course on Wednesdays, at 5.45 p.m., beginning January 20th. The lectures are free to members. For non-members the fee is 12s. 6d. for the term.

OBJECTS OF THE INSTITUTE

The British Institute of Philosophy exists to bring leading exponent of various branches of Philosophy into direct contact with the general public, with the purpose of satisfying a need felt by many men and women in every walk of life for greater clearness and comprehensiveness of vision in human affairs.

With this broad educational purpose in view, the Institute—

(1) Provides at suitable times in the day and evening courses of lectures by leading exponents in the more important subjects coming within the scope of Philosophy. All branches of Philosophy are represented—Ethics and Social Philosophy, the Philosophy of Law and of the Sciences, of the Fine Arts and of Religion, as well as Logic and Metaphysics and Psychology. These lectures are free to members.
(2) Issues a quarterly philosophical Journal (free to members).
(3) Proposes to form a philosophical Library.
(4) Gives guidance and assistance to individuals in their philosophical reading.
(5) Encourages research in Philosophy.

Those desirous of becoming members of the Institute are invited to apply for further particulars and forms of application to the Director of Studies, University Hall, 14 Gordon Square, London, W.C. 1.

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